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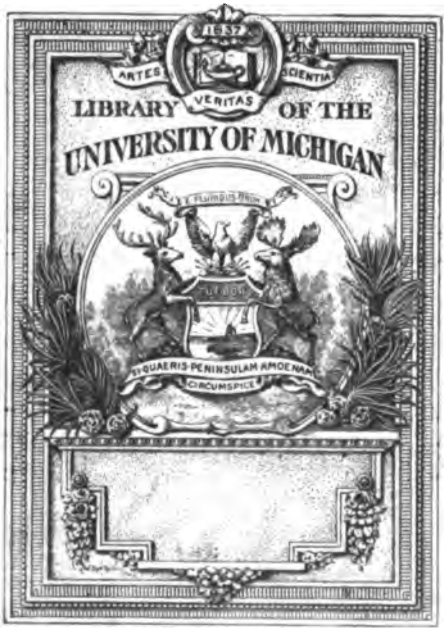

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THIRTY-FIRST ANNUAL REPORT

OF THE

INDIANA STATE BOARD OF HEALTH

FOR THE FISCAL AND BOARD YEAR ENDING
SEPTEMBER 30, 1912

FOR THE STATISTICAL YEAR ENDING
DECEMBER 31, 1912

TO THE GOVERNOR

INDIANAPOLIS:
WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING
1914

THE STATE OF INDIANA,
EXECUTIVE DEPARTMENT,
December 2, 1912.

Received by the Governor, examined and referred to the Auditor of State for verification of the financial statement.

OFFICE OF THE AUDITOR OF STATE,
INDIANAPOLIS, December 7, 1912.

The within report, so far as the same relates to moneys drawn from the State Treasury, has been examined and found correct.

W. H. O'BRIEN,
Auditor of State.

DECEMBER 7, 1912.

Returned by the Auditor of State, with above certificate, and transmitted to Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

MARK THISTLETHWAITE,
Secretary to the Governor.

Filed in the office of the Secretary of State of the State of Indiana, December 7, 1912.

L. G. ELLINGHAM,
Secretary of State.

Received the within report and delivered to the printer December 12, 1912.

ED D. DONNELL,
Clerk Printing Board.

MEMBERS OF THE INDIANA STATE BOARD OF HEALTH.

Fred A. Tucker, M.D. President	Noblesville.
T. Henry Davis, M.D. Vice-President	Richmond.
James S. Boyers, M.D.	Decatur.
John R. Hicks, M.D.	Covington.
J. N. Hurty, M.D. Phar. D., Secretary	Indianapolis.

269804

LETTER OF TRANSMITTAL.

INDIANAPOLIS, November 30, 1912.

HON. THOMAS R. MARSHALL, *Governor of Indiana:*

Sir—I have the honor to present herewith the Thirty-first Annual Report of the Indiana State Board of Health. The report, according to the law's command, gives the transactions and expenditures for the fiscal year ending September 30, 1912; also complete report of the work of the two departments of the State Laboratory of Hygiene, which is under the control of the State Board.

The Statistical Report, which according to the law shall be for the calendar year, cannot be compiled until after that date. We shall, therefore, send in said statistical report as soon after January 1st as it can be tabulated and analyzed; and with our present force and facilities it will take three, or perhaps four months, to do the work. We will push this report with all possible speed.

Very respectfully,

J. N. HURTY,
Secretary.

THIRTY-FIRST ANNUAL REPORT

OF THE

Indiana State Board of Health.

HON. THOMAS R. MARSHALL, *Governor of Indiana:*

Sir.—The Indiana State Board of Health, in accordance with the statutes, has the honor to present herewith its Thirty-first Annual Report.

REVIEW OF RECENT PUBLIC HEALTH LAWS.

The Legislature of 1911 enacted a number of laws pertaining to public health work, including the Sanitary Schoolhouse Law, the Medical Inspection Law, the Hydrophobia Law and others. The purpose of the Sanitary Schoolhouse Law and the Medical Inspection Law are well stated in the title of these acts as follows: "To protect and conserve the health and lives of school children and increase their efficiency." Sufficient time has elapsed that judgment can be pronounced upon these laws in the light of results that have been accomplished through their interpretation and application. The real measure of the worth of any law is to be found in its power as an educational force, rather than in the certainty of its penalties. We may well doubt the wisdom of that law which in its application becomes merely punitive and fails to be a potent factor in creating a sentiment against the evil it seeks to correct.

THE SANITARY SCHOOL HOUSE LAW.

Since April, 1911, when the Sanitary Schoolhouse Law became effective the record of school buildings erected and remodeled within the state is as follows:

One room buildings, new	104	
Cost of same		$246,540
Buildings of more than one room, new	148	
Cost of same		2,993,940
One room buildings remodeled	46	
Cost of same		44,900
Buildings of more than one room, remodeled	52	
Cost of same		342,450

Total number of new buildings, 252, at a cost of $3,240,480.

Total number of remodeled buildings, 98, at a total cost of $387,350.

A total sum of $3,627,830 has therefore been expended in two years in the construction of sanitary school buildings in order to "conserve the lives and health and increase the efficiency of school children."

The State Board of Health in the same period has condemned 74 schoolhouses as being insanitary and unfit while others have been condemned for the same reasons by county health commissioners. No school building is condemned by the State Board of Health except upon a sanitary survey and report made by an official representative of the Board, after a petition requesting such sanitary survey, signed by at least ten patrons of the school has been filed with the State Health Commissioner. At present 45 such petitions are on file in the office of the State Board awaiting action.

THE MEDICAL INSPECTION LAW.

Under the Medical Inspection Law which is advisory only, systematic supervision of the health of school children, more or less complete, has been established in most of the city schools, and in many township schools throughout the State. No word of valid criticism has been heard wherever established, while the record of outbreaks of epidemic disease prevented or shortened in duration, of schools kept open and of the efficiency of school work increased, give ample evidence of the wisdom of the law. That systematic and efficient supervision of the health of children in school will become more and more an essential part of school administration throughout the state seems a certainty. That medical school inspection should be made compulsory at this time is questioned by some. Efficient health supervision requires the active co-operation of school officials, parents and teachers, and whenever such co-operation is lacking it must fail of complete accomplishment.

Most school officials, most parents and even many teachers do not fully recognize the need of medical inspection nor comprehend the means by which the school must safeguard the welfare of its pupils. Education must be had on the part of all who are in any way responsible for conditions affecting the wellbeing of school children. The people of the State must realize that the schoolhouse and the school are the visible index of their attitude toward their children. The old insanitary schoolhouse with no care for the health of children must go, and in its place will be the modern school building with sanitary equipment and every provision to safeguard the physical welfare of the pupils. The Sanitary Schoolhouse Law and the Medical Inspection Law mark an epoch in the school history of the State. The attention of the people has been called to the startling conditions which these laws seek to correct and the people are beginning to respond. Parent-teachers clubs, devoted solely to the best interests of the schools, are organizing rapidly in every section of the State. No movement of recent years has within it the power for such great good or such splendid field of opportunity. The great fact underlying all this, is that of the community awakening to a sense of community responsibility for the well being of the future citizens of the State, and recognizing that no amount of money required to safeguard the school child from disease and death and insure the highest efficiency, may be withheld or considered misspent.

A SANITARY ENGINEERING DEPARTMENT.

Most of the plans for new and remodeled school buildings throughout the State have been submitted to the State Board of Health for approval or criticism. This of course has been voluntary both on the part of school officials and the State Board, since no law requires that building plans be submitted, or that the State Board of Health shall pass on such plans. Public demand for authoritative action is therefore, in this instance, ahead of statutory legislation. What the people demand, the Legislature should grant. The State Board of Health should be empowered to pass on all schoolhouse plans and give final approval or disapproval under the terms and provisions of the Sanitary Schoolhouse Law. To do this would require a department of sanitary engineering in addition to the present organization of the State Board, in order that plans for heating and ventilation might be passed upon by a sanitary engineer especially trained and competent for the work. The value of such a department of sanitary engineering to the State would not be limited to schoolhouses. The matter of water supplies, of proper disposal of sewage, of lighting and ventilation in public buildings and in factories, of protection from occupational diseases, these and many other vital problems are presented to the State Board of Health daily, all of which are problems of sanitary engineering to be solved principally by the expert sanitary engineer. No school building should be constructed, no system of public water supply established, no method of sewage or trade waste disposal put in operation, no public amusement, recreation, commercial, industrial, factory or other building in which people are to assemble or be employed should be erected until the sanitary provisions of such building plans have had the approval of the State Board of Health.

The saving to the State through such a department would be immense, not only in the prevention of unwise expenditure of money by reason of incompetency, but in the equally important prevention of disease and premature death. In the present stage of public health work in Indiana, a sanitary engineering department with sufficient appropriation to enable the State Board of Health to give scientific aid in the solution of sanitary problems, is absolutely necessary.

THE HYDROPHOBIA LAW.

Under the Hydrophobia Law of 1911 it is made the duty of the State Board of Health to provide means to give the Pasteur preventive treatment to persons in danger of hydrophobia and who are without visible means to pay for such treatment. The law also authorizes the State Board of Health to establish and maintain an institute for the purpose. Since July 1, 1911, when the funds as provided by law became available, the Board has treated 114 cases at a total expense of $4,648.41 or an average of $40.75 for each case. This total expense includes not only expense of treatment, but the traveling expense of patients, their living expense while under treatment, and the equipment and maintenance of an "institute" which occupies a part of one room in the State House, under the supervision of the Laboratory of Hygiene of the State Board of Health. The work imposed by the Hydrophobia Law, added to the already large and ever increasing work of the Laboratory of Hygiene, has made it most difficult for the laboratory to render good service to the State, and has made it impossible with the present force available and the lack of room at the present location, to give that prompt and efficient service which its importance demands. The laboratory, together with the Pasteur Institute should be given large quarters with a sufficient equipment and force to enable it to not only give prompt and efficient service in the routine work imposed upon it by law, but to enable it to carry on experimental and research work and to inquire into epidemics and the obscure causes of disease. Such research work should be a logical and integral part of the work of every laboratory conducted as an aid to public health work, but this has been denied the State Board of Health by reason of insufficient appropriations and lack of room for the Laboratory of Hygiene.

The State House is congested. Much complaint is made because of the proximity of the Laboratory of Hygiene to other offices. An appropriation of $5,000 is needed to enable the laboratory to secure and maintain suitable quarters outside the State House, thereby insuring better service and in a measure relieving the overcrowded condition of the State House.

EXECUTIVE OFFICES CROWDED.

The executive offices of the State Board of Health are badly overcrowded. In the Department of Vital Statistics, records of births and deaths are received at the rate of more than 87,000 each year. The permanent preservation of these records in a manner convenient of access, is imperative. But no adequate provision can be made for them in the present offices for lack of room. Much of the work required in compiling and classifying the vital statistics of the State must be done outside of the office rooms of the State Board. The location of this work and the tenure of such location at any given time, depends entirely upon the kindness and tolerance of the occupants of other appointed offices in the State House. Because of these conditions much confusion is inevitable and the efficiency of the service is impaired. The Board should have an additional room adjacent to the present rooms in which case the corridor room can be utilized for filing and preserving the records of vital statistics, and the now scattered work can be concentrated under the supervision of the executive.

CO-OPERATION WITH OTHER DEPARTMENTS.

What may be termed the New Public Health is concerned not merely with the control of epidemic disease but with its prevention. It must therefore go back of the disease and eliminate the cause. To do this requires that boards of health must deal with any and all conditions whatsoever that make preventable disease possible. Sanitary conditions under which labor is employed, occupational diseases, housing, the source of food and water supply, the spread of venereal disease, the traffic in habit forming and health destroying drugs, the care of unfortunates in either state or private institutions, these and many other conditions that directly or remotely affect community health are proper subjects of investigation and action on the part of the State Board of

Health. There should be co-operation between the State Board of Health and every other department of state government which is charged with responsibility in any way affecting the health of any portion of the citizens of the State. The State Board of Health invites such co-operation in every department of common interest.

THE FIGHT AGAINST TUBERCULOSIS.

It has been said that the State will get rid of the conditions that favor the spread of tuberculosis, it will at the same time get rid of three-fourths of its poverty and one-half of its crime. This statement may be overdrawn, but there is much of truth in it. What the State Board of Health is doing toward the prevention of tuberculosis is fully set forth in the body of this report. It is now recognized by science that a most prolific source of tuberculosis in the human is by means of infected meat and milk used as food. Reliable tests have shown that at least ten per cent. of the dairy cattle of Indiana are tuberculous. The law of the State relating to the control and eradication of cattle tuberculosis is woefully inefficient, and the State Veterinarian is denied executive authority. The law should be made specific in order to deal effectively with this great source of preventable disease and death. The State Veterinarian should be given ample power and generous appropriations to enforce the law.

Because cattle tuberculosis is so closely related to tuberculosis in the human, its prevention is public health work and should logically be under the supervision of the boards of health. Ultimately the State Veterinarian's department must be a department of the State Board of Health with the State Veterinarian the head of the department.

POLIOMYELITIS (INFANTILE PARALYSIS.)

Complying with the order of the Legislature, the State Board of Health has caused an investigation and study to be made of poliomyelitis within the State. Rules requiring a report and quarantine in all cases of the disease were passed and promulgated as required by law. A special circular to health officers and physicians was issued requiring that all cases be reported directly to the State Board of Health for investigation. Physicians and health officers have given hearty co-operation in this work, so that complete reports have been obtained in practically all cases occurring in the State. In many instances the Epidemiologist of the

Board together with the Superintendent of the Laboratory of Hygiene have made personal investigations in different sections of the State. Sections of spinal cord from various domestic animals, where some obscure affection in such animals seemed to be related to the appearance of the disease in the human, were secured by autopsy. Such sections were sent to the Flexner Laboratory at New York City where cultures were made in an effort to produce the disease experimentally in monkeys. The attempts failed in every case. Some experimental and research work was done in the Laboratory of Hygiene of the State Board, but no positive results were obtained. In spite of research work in laboratories and field studies of epidemics, the true source and manner of infection in this dread disease remains unknown. The following facts, however, seem clearly established:

1. The disease is infectious and communicable.
2. Infection by direct contact occurs only in a very small percentage of cases. Under proper sick-room care this becomes negligible.
3. The disease is communicated from one to another by means of an intermediate host.
4. The intermediate host is one or more of the numerous insects associated with buildings and premises where domestic animals are kept.

Dr. M. J. Rosenau of Harvard University announced at the International Congress on Hygiene and Demography at Washington, that poliomyelitis is communicated by the bite of the "stable fly" (Stomoxys Calcitrans). The series of experiments upon which this claim is based seem convincing, but do not thoroughly establish the fact.

A brief summary of poliomyelitis in Indiana in 1911 and to November 1, 1912, is herewith given:

Total cases reported, 1911	142
Total deaths, 1911	66
Total cases more or less crippled one year after attack	43
Total cases reported, 1912, to November 1st	39
Total deaths, 1912, to November 1st	28

The epidemic in Indiana is apparently subsiding, having attained its greatest prevalence in 1911. A detailed report of this investigation and study will be issued by the State Board of Health.

CHEMICAL DEPARTMENT OF THE STATE BOARD OF HEALTH.

The Legislature of 1911 passed an act known as the Weights and Measures Law, which established standards of weights and measures and provided that the State Food and Drug Commissioner shall be the State Commissioner of Weights and Measures. It further provides that the State Commissioner of Weights and Measures shall take charge of the standards of the State and in general enforce the law. It provides that all the expenses incidental to the enforcement of the act, including the purchase of a complete set of dry and liquid measures, weights and balances and other necessary apparatus, and the salaries of the clerks, inspectors and deputies shall be paid out of the fund provided for the enforcement of the Pure Food and Drug Law. The only connection between the State Board of Health and the enforcement of the Weights and Measures Law is in the fact that the State Food and Drug Commissioner is ex officio the Commissioner of Weights and Measures, and that the money used for the enforcement of the law shall be paid out by certificates issued by the State Board of Health and attested by the Secretary. The necessity for the enforcement of the food and drug law has long been demonstrated. The desirability of similar activities in the enforcement of the Weights and Measures Law has been proved by the investigations made since the passage of the act. It does not, however, seem advisable to utilize funds provided for the carrying on of the work of the Food Department in the payment of officers who have no connection with the department other than their work under the direction of the State Commissioner of Weights and Measures. We believe that a special fund of at least $5,000 should be provided for the enforcement of the Weights and Measures Law.

For several years the chemical laboratories of the State Board of Health have, at the request of the Governor, analyzed samples of coal submitted by the superintendent of the Central Hospital for the Insane, the Woman's Prison, and the Girl's School at Clermont. These analyses have been made in order to determine the basis of payment for coal burned at these institutions, which is sold to the State under certain specifications. This work has amply demonstrated the very great desirability of the purchase of all coal consumed by state institutions on the basis of its actual heating value. This can only be done by providing that each carload of coal delivered be analyzed. The laboratories of the State Board of Health are equipped to do this work, but it seems to be a misuse of funds provided for the enforcement of the Food and Drug Law, to utilize them in making analyses of coal for state institutions. It is, therefore, suggested that a special fund be provided which can be drawn upon in payment for such work.

The Food and Drug Law requires that all preparations containing narcotics, such as cocaine, morphine, opium, etc., be plainly labeled to that effect. In general such preparations have been properly labeled. The sale of cocaine, however, in spite of the declaration of the contents on the package, continues. It is our belief that a law should be enacted restricting to the physician or dentist who finds in his practice a legitimate use for it, the dispensing of cocaine. We believe that such a law should provide that every sale of cocaine should be recorded and that its illegal sale be made an offense punishable by imprisonment in the State's Prison.

The Food and Drug Law as amended at the last Legislature of 1911, adequately meets the purposes for which it was enacted. By its enforcement, food adulterations have largely been stopped, and the sale of misbranded and mislabeled products reduced to a minimum. The labels of drugs and patent medicines conform to the law and carry no false or misleading statements. Nevertheless, the sale of fraudulent, patent and proprietary medicines continues. This is made possible only by reason of the fact that the drug law in no way regulates the character of advertisement which may be used in the sale of these so-called remedies. We believe that legislation is necessary, first to prohibit fraudulent advertisements, and second to require that the manufacturer of all preparations intended to be used for the cure or alleviation of diseases of man or other animals should be so regulated that those engaged in the business must have passed a stringent examination to determine their qualifications to prepare medicinal preparations. An examination is required before physicians, dentists or pharmacists can practice, but at the present time there is absolutely no regulation governing the manufacturer of medicinal preparations. In our experience by far the greatest number of preparations marketed and sold in immense quantities in this State are manufactured by those who have little or no knowledge of the science of medicine.

NEW HEALTH LEGISLATION.

The Health Law now upon the statute books commands that the State Board of Health shall from time to time make such suggestions with regard to legislation as it may deem important in reference to the public health. In accordance with this, we have to suggest that sooner or later an amendment should be made to the present Health Law in regard to the practical administration of county health affairs. Under the present law, the commissioners appoint any physician as county health commissioner. The law does not specify the amount of time which he shall give to the work, but does specify the salary which shall be paid to him. Under this arrangment, the physician appointed as county health commissioner, cannot in the nature of things have the co-operation of the medical fraternity, as he depends almost entirely upon his practice for his support, his salary being only a small factor. As he must practice, this brings him in constant competition with brother physicians, and in many instances the commissioner, by virtue of his office and position, takes the advantage of brother practitioners, and enmity and opposition is thus aroused. Again, county health commissioners under the present system give as much time as they please to their public work. They are commanded to exercise health supervision over their county, but as they are permitted to give such time to it as they please, really very little supervision is done. Experience has shown this method of administering public health affairs in counties is not efficient, and indeed is wasteful. We therefore suggest an amendment to the Health Law requiring that county health commissioners shall be appointed from an eligible list supplied by the State Board of Health, the State Board to determine such list of elegibles through examinations held according to the statute provided. These commissioners should be paid a living salary, and should give their whole time to their work. It should be their duty to accurately collect and record the vital statistics; to make sanitary inspections of all the schools in the county and look carefully after the health of the school children; they should promptly attend to epidemics, or, better, be constantly on the watch to prevent the coming of epidemics; they should be laboratory men, capable of doing laboratory work and be provided with laboratories. Their official position, power and dignity should be equivalent to that of the sheriff of the county.

Massachusetts already has health officers of this character, giving their whole time to the work, and experience has proven it is not an expense, but is a saving. The State of Michigan will consider at the next session of its Legislature creating county health commissioners to serve full time, so also will Pennsylvania, New

York and Connecticut. We earnestly recommend an amendment to the law embodying the ideas herewith set forth, to the end that more thorough and scientific health administration would be given the people, and money saved thereby.

THE LABORATORY OF HYGIENE.

The Laboratory of Hygiene, the very great value of which will be attested by all our physicians, and which is performing an important part in lowering the sick and the death rate of the State, is situated in Room 122 on the third floor of the State House. For many reasons, it should never have been located in the capitol building and should be removed therefrom. The character of work done in it, namely, the handling of disease germs, and diseased tissues, demands that it be in a building by itself. Besides, it has outgrown its present quarters and daily we are compelled to tell the people we can not serve them because our capacity is reached. We therefore suggest that the Legislature give permission for the State Board of Health to rent suitable quarters and move this laboratory out of the State House. In order to do this, and to meet the increased demands upon the laboratory for services, it would be necessary to increase its appropriation. The appropriation for the Laboratory of Hygiene at the present time is $10,000 per annum. In order to fit up and pay the rent of suitable quarters outside the State House building, and to meet the increased demands upon this laboratory, an increased appropriation of $5,000 would be required. The betterment which would attend this change would be very great indeed. It would give another room in the State House for other purposes, and it is well known more room is greatly needed.

We hope after a review of this situation, that it will meet with your judgment and be your pleasure to advocate the amendment to the Health Law concerning county health commissioners, and also the laboratory suggestion herewith submitted.

Approved by the State Board of Health.

FRED A. TUCKER, President.
T. HENRY DAVIS, Vice-President.
JAS. S. BOYERS, Member.
JOHN R. HICKS, Member.
J. N. HURTY, Secretary.

FINANCIAL STATEMENT.

INDIANA STATE BOARD OF HEALTH.

For Fiscal Year October 1, 1911, to September 30, 1912.

1911.			
Oct.	13.	To Dr. Fred A. Tucker, board meetings	$21 46
"	13.	To Dr. T. Henry Davis, board meetings	7 75
"	13.	To Dr. Jas. S. Boyers, board meetings	10 55
"	13.	To Dr. J. R. Hicks, board meetings	9 00
"	26.	To Robt. H. Bryson, P. M., postage stamps	100 00
"	27.	To Dr. Fred A. Tucker, board meeting	46 71
"	27.	To Dr. T. Henry Davis, board meeting	8 05
"	27.	To Dr. J. R. Hicks, board meeting	8 55
"	31.	To Dr. C. A. Carter, salary	100 00
"	31.	To Mrs. Eva Case, salary	50 00
"	31.	To Miss Ethel Hoffman, salary	50 00
"	31.	To Miss Louise Lingenfelter, salary	50 00
"	31.	To Fannie Stevenson, salary	50 00
"	31.	To Miriam Tull, salary	50 00
"	31.	To Elva Schweitzer, salary	40 00
"	31.	To Ray G. Dunn, salary	40 00
Nov.	8.	To American Thermo-ware Co., merchandise	12 82
"	8.	To Aquos Distilled Water Co., merchandise	1 00
"	8.	To The Cavascope Co., merchandise	5 00
"	8.	To Ray Dunn, expense	20 06
"	8.	To Adams Express Company, service	5 35
"	8.	To American Express Company, service	8 42
"	8.	To U. S. Express Company, service	2 24
"	8.	To Indiana Electrotype Company, merchandise	17 75
"	8.	To Indianapolis Calcium Light Company, service	17 75
"	8.	To The H. Lieber Company, merchandise	10 30
"	8.	To Geo. J. Mayer, merchandise	1 30
"	8.	To Public Officials Magazines, subscription	1 00
"	8.	To W. K. Stewart Company, merchandise	6 25
"	8.	To Central Union Telephone Co., rent and tolls	24 45
"	8.	To Indianapolis Telephone Co., rent and tolls	25 80
"	8.	To Railroad Transfer Co., freight and drayage	1 75
"	8.	To Vonnegut Hardware Co., merchandise	46
"	8.	To J. L. Anderson, expense	4 39
"	30.	To Dr. C. A. Carter, salary	100 00
"	30.	To Mrs. Eva Case, salary	33 33
"	30.	To Ethel Hoffman, salary	50 00
"	30.	To Louise Lingenfelter, salary	50 00
"	30.	To Fannie Stevenson, salary	50 00
"	30.	To Miriam Tull, salary	50 00
"	30.	To Elva Schweitzer, salary	40 00

Nov.	30.	To Mayetta Hornbeck, salary	$16 67
"	30.	To Ray Dunn, salary	40 00
Dec.	2.	To Mayetta Hornbeck, salary	3 37
"	5.	To J. L. Anderson, expense	2 65
"	5.	To Aquos Distilled Water Co., merchandise	2 00
"	5.	To Bass Photo Co., merchandise	26 10
"	5.	To Charities Publishing Committee, subscriptions	2 00
"	5.	To Ray Dunn, expense	28 20
"	5.	To Educational Exhibition Co., merchandise	74 69
"	5.	To Adams Express Co., service	5 17
"	5.	To The American Express Co., service	8 07
"	5.	To United States Express Co., service	1 13
"	5.	To Fertig & Keevers, signs	18 45
"	5.	To Indiana Electrotype Co., merchandise	5 61
"	5.	To Indianapolis Calcium Light Co., merchandise	2 00
"	5.	To Indianapolis Tent and Awning Co., service	1 00
"	5.	To George Kleine, merchandise	57 85
"	5.	To L. E. Morrison & Co., merchandise	8 00
"	5.	To Rand, McNally & Co., maps	25 00
"	5.	To W. K. Stewart Co., books	16 75
"	5.	To Vonnegut Hardware Co., merchandise	1 10
"	5.	To Dr. J. P. Ward, photos	7 75
"	5.	To Western Union Telephone Co., tolls	2 73
"	9.	To Mrs. Eva Case, salary	12 50
"	30.	To American Multigraph Sales Co., merchandise	320 00
"	30.	To Indianapolis Calcium Light Co.	365 00
"	30.	To C. P. Lesh Paper Co., merchandise	280 68
"	30.	To Smith-Premier Typewriter Co., merchandise	107 00
"	31.	To Dr. C. A. Carter, salary	100 00
"	31.	To Ethel Hoffman, salary	50 00
"	31.	To Louise Lingenfelter, salary	50 00
"	31.	To Lucetta Lee, salary	25 00
"	31.	To Fannie Stevenson, salary	50 00
"	31.	To Sadye Slutzke, salary	50 00
"	31.	To Elva Schweitzer, salary	40 00
"	31.	To Ray Dunn, salary	40 00
1912.			
Jan.	6.	To American Medical Association, subscriptions journal	5 00
"	6.	To American Toilet Supply Co., laundry	3 75
"	6.	To Aquos Distilled Water Co., merchandise	17 00
"	6.	To W. H. Bass Photo Co., merchandise	3 00
"	6.	To H. M. Bracken, Secretary-Treasurer, dues	10 00
"	6.	To Wm. B. Burford, merchandise	112 86
"	6.	To Dr. Hugh A. Cowing, expense	6 70
"	6.	To Dennison Manufacturing Co., merchandise	3 52
"	6.	To Adams Express Co., service	5 90
"	6.	To American Express Co., service	3 98
"	6.	To United States Express Co., service	50
"	6.	To Fulton Office Furniture Co., merchandise	15 02

Jan.	6.	To Indianapolis Calcium Light Co., merchandise	$53	50
"	6.	To George Kleine, merchandise	70	10
"	6.	To C. P. Lesh Paper Co., merchandise	83	97
"	6.	To The H. Lieber Co., merchandise	6	15
"	6.	To L. E. Morrison & Co., merchandise	15	75
"	6.	To Puryear & Porter, freight and drayage	4	97
"	6.	To Railroad Transfer Co., freight and drayage	2	02
"	6.	To Central Union Telephone Co., rent and tolls	27	75
"	6.	To Indianapolis Telephone Co., rent and tolls	31	15
"	6.	To Western Union Telegraph Co., rent and tolls	6	98
"	6.	To J. L. Anderson, expense	1	25
"	6.	To R. G. Dunn, expense	15	95
"	6.	To Dr. Geo. E. Hunt, service	5	00
		Total first quarter	$3,539	73
Jan.	2.	To Robert H. Bryson, P. M., postage stamps	$150	00
"	12.	To Dr. Fred A. Tucker, board meeting	11	91
"	12.	To Dr. Jas. S. Boyers, board meeting	15	55
"	12.	To Dr. John R. Hicks, board meeting	14	00
"	12.	To Dr. J. N. Hurty, expense	61	50
"	15.	To Dr. J. W. Birchfield, salary and expense	42	17
"	22.	To Dr. J. W. Birchfield, salary and expense	46	39
"	23.	To Dr. J. R. Hicks, acct. Am. P. H. Assoc., Cuba and expense	326	75
"	25.	To Dr. J. W. Birchfield, service and expense	11	94
"	27.	To George M. King, service and expense	27	02
"	31.	To Dr. C. A. Carter, salary	100	00
"	31.	To Ethel Hoffman, salary	60	00
"	31.	To Louise Lingenfelter, salary	60	00
"	31.	To Fannie Stevenson, salary	60	00
"	31.	To Lucetta Lee, salary	50	00
"	31	To Sadye Slutzke, salary	50	00
"	31.	To Elva Schweitzer, salary	40	00
"	31.	To R. G. Dunn, salary	30	00
"	31.	To George M. King, salary	10	00
Feb.	6.	To American Public Health Association, dues and subscription	5	00
"	6.	To Aquos Distilled Water Co., merchandise	2	00
"	6.	To Wm. B. Burford, merchandise	575	91
"	6.	To Dr. C. A. Carter, expense	63	86
"	6.	To Adams Express Co., service	15	56
"	6.	To American Express Co., service	9	11
"	6.	To United States Express Co., service	6	89
"	6.	To Fertig & Keevers, 2 banners	5	75
"	6.	To Indiana Electrotype Co., merchandise	7	50
"	6.	To Dr. J. M. King, service	10	50
"	6.	To George M. King, expense	18	34
"	6.	To Mount Transfer Co., drayage	1	25
"	6.	To Railroad Transfer Co., drayage	2	15

Feb.	6.	To J. W. Roper, service	$10 10
"	6.	To Smith-Premier Typewriter Co., merchandise	3 50
"	6.	To W. K. Stewart & Co., books	5 00
"	6.	To Western Union Telegraph Co., tolls	4 96
"	6.	To Indianapolis Telephone Co., tolls	3 30
"	6.	To J. L. Anderson, expense	7 13
"	3.	To George Baker, labor	14 25
"	8.	To R. G. Dunn, expense	24 05
"	13.	To George M. King, expense	13 05
"	14.	To John Owens, expense	33 95
"	19.	To Robert H. Bryson, P. M., stamps	150 00
"	29.	To Dr. C. A. Carter, salary	100 00
"	29.	To Ethel Hoffman, salary	60 00
"	29.	To Louise Lingenfelter, salary	60 00
"	29.	To Fannie Stevenson, salary	60 00
"	29.	To Sadye Slutzke, salary	50 00
"	29.	To Lucetta C. Lee, salary	50 00
"	29.	To Elva Schweitzer, salary	50 00
"	29.	To Nelle Rollison, salary	18 34
"	29.	To George M. King, salary	40 00
"	29.	To John Owens, salary	125 00
Mar.	8.	To Aquos Distilled Water Co., merchandise	1 50
"	8.	To W. H. Bass Photo Co., merchandise	4 20
"	8.	To Wm. B. Burford, merchandise	1,690 44
"	8.	To Adams Express Co., service	10 21
"	8.	To American Express Co., service	5 38
"	8.	To National Express Company, service	23
"	8.	To Indiana Electrotype Co., merchandise	5 65
"	8.	To Robert E. Hanna, service	3 75
"	8.	To The H. Lieber Co., merchandise	1 70
"	8.	To Railroad Transfer Co., freight and drayage	3 51
"	8.	To Remington Typewriter Co., merchandise	75
"	8.	To W. K. Stewart Co., merchandise	13 35
"	8.	To The Stoneman Press, reprints	5 00
"	8.	To Central Union Telephone Co., tolls	5 35
"	8.	To Indianapolis Telephone Co., tolls	1 20
"	8.	To Western Union Telegraph Co., tolls	50
"	8.	To Dr. Fred A. Tucker, expense	30 25
"	8.	To George M. King, expense	28 20
"	8.	To John Owens, expense	45 31
"	8.	To J. L. Anderson, expense	2 38
"	8.	To Lancet-Clinic Publishing Co., Journal, 1912	3 00
"	25.	To Geo. M. King, expense	29 40
"	27.	To John Owens, expense	34 30
"	31.	To Dr. C. A. Carter, salary	100 00
"	31.	To Ethel Hoffman, salary	60 00
"	31.	To Louise Lingenfelter, salary	60 00
"	31.	To Fannie Stevenson, salary	60 00
"	31.	To Sadye Slutzke, salary	50 00
"	31.	To Lucetta C. Lee, salary	50 00

Mar.	31.	To Elva Schweitzer, salary	$50 00
"	31.	To Nelle Rollison, salary	50 00
"	31.	To George M. King, salary	40 00
"	31.	To John Owens, salary	125 00
Apr.	5.	To Addressograph Co., merchandise	1 42
"	5.	To American Toilet Supply Co., laundry	8 75
"	5.	To Aquos Distilled Water Co., merchandise	2 50
"	5.	To W. H. Bass Photo Co., merchandise	13 20
"	5.	To Brannum-Keene Lumber Co., bookcase	83 00
"	5.	To Wm. B. Burford, merchandise	177 04
"	5.	To Dennison Mfg. Co., merchandise	6 67
"	5.	To Educational Exhibit Co., merchandise	3 15
"	5.	To Adams Express Co., service	3 32
"	5.	To American Express Co., service	3 55
"	5.	To National Express Co., service	1 36
"	5.	To United States Express Co., service	2 58
"	5.	To John Lees, merchandise	15 00
"	5.	To Indiana Electrotype Co., merchandise	1 75
"	5.	To C. P. Lesh Paper Co., merchandise	7 43
"	5.	To Railroad Transfer Co., freight and drayage	8 03
"	5.	To Ransom & Randolph Co., slides	13 00
"	5.	To W. K. Stewart Co., books	10 10
"	5.	To Central Union Telephone Co., rent and tolls	22 25
"	5.	To Indianapolis Telephone Co., rent and tolls	24 85
"	5.	To Postal Telegraph Cable Co., tolls	25
"	5.	To Western Union Telegraph Co., tolls	7 46
"	5.	To George M. King, expense	2 85
"	5.	To John Owens, expense	55 07
"	5.	To J. L. Anderson, expense	4 07
"	5.	To Dr. J. N. Hurty, expense	69 60
		Total second quarter	$5,887 58
Apr.	6.	To Robert H. Bryson, P. M., stamps	$100 00
"	10.	To Sullivan Democrat, printing	4 00
"	10.	To J. W. Roper, M. D., services	7 60
"	13.	To George M. King, expense	21 85
"	12.	To Dr. F. A. Tucker, board meeting	17 90
"	12.	To Dr. T. Henry Davis, board meeting	2 75
"	12.	To Dr. Jas. S. Boyers, board meeting	5 60
"	12.	To Dr. J. R. Hicks, board meeting	4 05
"	20.	To Geo. M. King, expense	14 05
"	20.	To John Owens, expense	43 98
"	27.	To George M. King, expense	15 45
"	30.	To Dr. C. A. Carter, salary	100 00
"	30.	To Ethel Hoffman, salary	60 00
"	30.	To Louise Lingenfelter, salary	60 00
"	30.	To Fannie Stevenson, salary	60 00
"	30.	To Sadye Slutzke, salary	50 00
"	30.	To Lucetta C. Lee, salary	50 00

Apr.	30.	To Elva Schweitzer, salary	$50 00
"	30.	To Nelle Rollison, salary	50 00
"	30.	To Geo. M. King, salary	40 00
"	30.	To John Owens, salary	125 00
May	9.	To American Multigraph Co., merchandise	4 00
"	9.	To Aquos Distilled Water Co., merchandise	2 50
"	9.	To Arnold Brennon, service	8 50
"	9.	To Balke & Krauss Co., merchandise	13 00
"	9.	To W. H. Bass Photo Co., merchandise	3 80
"	9.	To Wm. B. Burford, merchandise	217 20
"	9.	To Dennison Mfg. Co., merchandise	1 99
"	9.	To Adams Express Co., service	2 05
"	9.	To American Express Co., service	5 38
"	9.	To National Express Co., service	16
"	9.	To United States Express Co., service	66
"	9.	To Fertig & Keevers, service	13 00
"	9.	To Indiana Electrotype Co., service	1 00
"	9.	To Indianapolis Tent and Awning Co., labor	50
"	9.	To The H. Lieber Co., merchandise	2 50
"	9.	To Geo. J. Mayer Co., merchandise	1 35
"	9.	To Nicholson's Sons, merchandise	5 00
"	9.	To Railroad Transfer Co., freight and drayage	18 27
"	9.	To W. K. Stewart Co., books	3 35
"	9.	To Central Union Telephone Co., tolls	5 35
"	9.	To Indianapolis Telephone Co., tolls	1 90
"	9.	To J. L. Anderson, expense	9 38
"	9.	To George M. King, expense	18 25
"	9.	To John Owens, expense	50 07
"	9.	To Miss E. H. Butler, service	15 00
"	17.	To R. H. Bryson, P. M., stamps	200 00
"	18.	To Dr. F. A. Tucker, H. O. Conference and expense	24 65
"	18.	To Dr. T. Henry Davis, H. O. Conference and expense.	8 80
"	18.	To Dr. Jas. S. Boyers, H. O. Conference and expense	18 55
"	18.	To Dr. J. R. Hicks, H. O. Conference and expense	18 80
"	18.	To Prof. Severance Burrage, services	10 00
"	18.	To W. C. Rucker, Asst. Surg.-Gen. U. S. M. H. S	10 00
"	18.	To Dr. Otis B. Nesbit, services	10 00
"	18.	To Mrs. Albion Fellows Bacon, services	10 00
"	18.	To Mr. William Maurer, services	10 60
"	20.	To George M. King, expense	19 90
"	25.	To John Owens, expense	50 90
"	25.	To George M. King, expense	21 63
"	31.	To Dr. C. A. Carter, salary	100 00
"	31.	To Ethel Hoffman, salary	60 00
"	31.	To Louise Lingenfelter, salary	60 00
"	31.	To Fannie Stevenson, salary	60 00
"	31.	To Sadye Slutzke, salary	50 00
"	31.	To Lucetta C. Lee, salary	50 00
"	31.	To Elva Schweitzer, salary	50 00
"	31.	To Nelle Rollison, salary	50 00

May	31.	To George M. King, salary	$40 00
“	31.	To John Owens, salary	125 00
June	8.	To American Multograph Sales Co., merchandise	3 75
“	8.	To Aquos Distilled Water Company, merchandise	3 00
“	8.	To W. B. Burford, merchandise	105 29
“	8.	To Adams Express Company, service	4 53
“	8.	To American Express Company, service	4 83
“	8.	To National Express Company, service	1 40
“	8.	To United States Express Company, service	1 21
“	8.	To Francis Pharmacy Co., merchandise	6 00
“	8.	To Indiana Electrotype Company, merchandise	15 75
“	8.	To The H. Lieber Company, merchandise	2 80
“	8.	To Geo. J. Mayer & Co., merchandise	1 90
“	8.	To Railroad Transfer Company, freight and drayage	13 87
“	8.	To Central Union Telephone Company, tolls	8 15
“	8.	To Western Union Telegraph Co., tolls	15 20
“	8.	To George M. King, expense	32 40
“	8.	To John Owens, expense	46 74
“	8.	To Indianapolis Telephone Company, tolls	1 55
“	8.	To J. L. Anderson, expense	4 48
“	8.	To Dr. C. D. Luckett, expense	4 14
“	8.	To W. H. Bass Photo Company, merchandise	6 80
“	19.	To John Owens, expense	46 88
“	21.	To George M. King, expense	14 53
“	30.	To Dr. C. A. Carter, salary	100 00
“	30.	To Ethel Hoffman, salary	60 00
“	30.	To Louise Lingenfelter, salary	60 00
“	30.	To Fannie Stevenson, salary	60 00
“	30.	To Sadye Slutzke, salary	50 00
“	30.	To Lucetta C. Lee, salary	50 00
“	30.	To Elva Schweitzer, salary	50 00
“	30.	To Nelle Rollison, salary	50 00
“	30.	To Goerge M. King, salary	40 00
“	30.	To John Owens, salary	125 00
July	2.	To George M. King, expense	7 15
“	2.	To John Owens, expense	38 86
		Total third quarter	$3,381 43
July	12.	To Dr. Fred A. Tucker, board meeting	$122 46
“	12.	To Dr. T. Henry Davis, board meeting	12 75
“	12.	To Dr. Jas. S. Boyers, board meeting	15 55
“	12.	To Dr. J. R. Hicks, board meeting	14 10
“	12.	To American Toilet Supply Co., laundry	3 75
“	12.	To Aquos Distilled Water Co., merchandise	2 50
“	12.	To American Multigraph Sales Co., merchandise	1 50
“	12.	To P. Blackston's Son & Co., merchandise	5 50
“	12.	To Wm. B. Burford, merchandise	180 09
“	12.	To Adams Express Co., service	14 80
“	12.	To American Express Co., service	1 75

July	12.	To National Express Co., service	$0 25
"	12.	To W. H. Bass Photo Co., merchandise	11 40
"	12.	To Fertig & Keevers, merchandise	4 00
"	12.	To Indianapolis Calcium Light Co., merchadise	8 45
"	12.	To National Tuberculosis Assn., Geo. M. Sternberg, dues	5 00
"	12.	To Railroad Transfer Co., freight and drayage	3 29
"	12.	To Remington Typewriter Co., merchandise	7 00
"	12.	To W. K. Stewart Co., merchandise	1 60
"	12.	To Central Union Telephone Co., rent and tolls	23 35
"	12.	To Indianapolis Telephone Co., rent and tolls	23 80
"	12.	To Western Union Telegraph Co., tolls	5 89
"	12.	To J. L. Anderson, expense	6 90
"	12.	To Dr. J. N. Hurty, expense	173 30
"	20.	To George M. King, expense	13 50
"	24.	To John Owens, expense	48 08
"	27.	To George M. King, expense	11 35
"	31.	To Dr. C. A. Carter, salary	125 00
"	31.	To Ethel Hoffman, salary	60 00
"	31.	To Louise Lingenfelter, salary	60 00
"	31.	To Fannie Stevenson, salary	60 00
"	31.	To Sadye Slutzke, salary	50 00
"	31.	To Lucetta C. Lee, salary	50 00
"	31.	To Elva Schweitzer, salary	50 00
"	31.	To Nelle Rollison, salary	50 00
"	31.	To George M. King, salary	50 00
"	31.	To John Owens, salary	125 00
Aug.	12.	To Robert H. Bryson, P. M., postage stamps	200 00
"	12.	To Aquos Distilled Water Co., merchandise	2 50
"	12.	To Wm. B. Burford, merchandise	1,071 55
"	12.	To Dr. C. A. Carter, expense	5 85
"	12.	To Central Supply Co., merchandise	2 82
"	12.	To Adams Express Co., service	4 27
"	12.	To American Express Co., service	5 74
"	12.	To National Express Co., service	6 90
"	12.	To United States Express Co., service	50
"	12.	To Furnas & Maddox, stereopticon	45 50
"	12.	To George M. King, expense	32 70
"	12.	To Railroad Transfer Co., freight and drayage	3 45
"	12.	To Remington Typewriter Co, balance on machine	53 27
"	12.	To W. K. Stewart Co., books	4 50
"	12.	To Central Union Telephone Co., tolls	6 85
"	12.	To Indianapolis Telephone Co., tolls	2 50
"	12.	To W. A. Tingler, merchandise	7 50
"	12.	To The H. Lieber Co., merchandise	3 35
"	12.	To J. L. Anderson, expense	5 43
"	21.	To John Owens, expense	27 40
"	29.	To John Owens, expense	42 00
"	31.	To Dr. C. A. Carter, salary	125 00
"	31.	To Ethel Hoffman, salary	60 00
"	31.	To Louise Lingenfelter, salary	60 00

Aug.	31.	To Fannie Stevenson, salary	$60	00
“	31.	To Sadye Slutzke, salary	50	00
“	31.	To Lucetta C. Lee, salary	50	00
“	31.	To Elva Schweitzer, salary	50	00
“	31.	To Nelle Rollison, salary	50	00
“	31.	To George M. King, salary	50	00
“	31.	To John Owens, salary	125	00
Sept.	6.	To Aquos Distilled Water Co., merchandise	1	50
“	6.	To W. H. Bass Photo Co., merchandise	2	80
“	6.	To Braunum-Keene Lumber Co., bookcase	45	15
“	6.	To Adams Express Co., service	4	49
“	6.	To American Express Co., service	8	22
“	6.	To National Express Co., service		25
“	6.	To United States Express Co., service		85
“	6.	To Indiana Electrotype Co., merchandise	11	10
“	6.	To George M. King, expense	5	10
“	6.	To John Owens, expense	38	12
“	6.	To Public Health Journal, subscription	3	00
“	6.	To W. K. Stewart Co., merchandise	8	75
“	6.	To Central Union Telephone Co., tolls	2	40
“	6.	To Indianapolis Telephone Co., tolls	3	90
“	6.	To Western Union Telegraph Co., tolls	6	42
“	6.	To J. L. Anderson, expense	3	80
“	13.	To Dr. Fred A. Tucker, expense	17	60
“	16.	To Balke & Krauss Co., merchandise	93	43
“	16.	To W. H. Bass Photo Co., merchandise	39	70
“	16.	To Consolidated Sign Co., labor	66	00
“	16.	To Dennison Mfg. Co., merchandise	45	69
“	16.	To Fertig & Keevers, merchandise	21	00
“	16.	To B. H. Herman & Co., merchandise	31	76
“	16.	To John Lees, merchandise	76	75
“	16.	To The H. Lieber Co., merchandise	43	71
“	16.	To Charles F. Schlegel, merchandise	35	00
“	16.	To Spencer Lens Co., merchandise	22	20
“	16.	To W. K. Stewart Co., merchandise	21	60
“	16.	To The Stewart-Carey Glass Co., merchandise	1	44
“	16.	To Vonnegut Hardware Co., merchandise	5	19
“	16.	To Dugan-Johnson Co., merchandise	36	80
“	16.	To Pennsylvania Railroad Co., freight	7	08
“	28.	To Robert H. Bryson, P. M., postage stamps	250	00
“	28.	To George M. King, expense	20	95
“	30.	To Dr. J. N. Hurty, expense	120	35
“	30.	To Dr. J. S. Boyers, expense	74	90
“	30.	To Dr. John R. Hicks, expense	118	90
“	30.	To Dr. W. F. King, expense	142	00
“	30.	To Dr. Alfred Henry, service	15	00
“	30.	To Dr. Fred A. Tucker, expense	15	20
“	30.	To John Owens, expense	116	15
“	30.	To Dr. L. W. Barry, expense	5	30
“	30.	To The American Toilet Supply Co., laundry	3	75

Sept.	30.	To The Addressograph Co., merchandise	$1 46
"	30.	To Wm. B. Burford, merchandise	591 23
"	30.	To Adams Express Co., service	24 45
"	30.	To American Express Co., service	4 60
"	30.	To United States Express Co., service	2 50
"	30.	To National Express Co., service	2 53
"	30.	To Fertig & Keevers, merchandise	7 00
"	30.	To The H. Lieber Co., merchandise	1 50
"	30.	To Railroad Transfer Co., freight and drayage	27 51
"	30.	To Remington Typewriter Co., repairs	75
"	30.	To Sander & Recker Furniture Co., carpet	96 00
"	30.	To W. K. Stewart Co., book	1 50
"	30.	To Central Union Telephone Co., rent and tolls	25 30
"	30.	To Indianapolis Telephone Co., rent and tolls	18 50
"	30.	To Western Union Telegraph Co., tolls	6 27
"	30.	To J. L. Anderson, expense	12 88
"	30.	To Dr. O. A. Carter, salary	125 00
"	30.	To Ethel Hoffman, salary	60 00
"	30.	To Louise Lingenfelter, salary	60 00
"	30.	To Fannie Stevenson, salary	60 00
"	30.	To Sadye Slutzke, salary	50 00
"	30.	To Lucetta O. Lee, salary	50 00
"	30.	To Elva Schweitzer, salary	50 00
"	30.	To Nelle Rollison, salary	50 00
"	30.	To George M. King, salary	50 00
"	30.	To John Owens, salary	125 00
		Total fourth quarter	$6,713 77

RECAPITULATION.

Appropriations.

Appropriation, general	$20,000 00	
Secretary's salary, specific	3,000 00	
Chief clerk's salary, specific	1,500 00	
		$24,500 00

Expense.

First quarter	$3,539 73	
Second quarter	5,887 58	
Third quarter	3,381 43	
Fourth quarter	6,713 77	
Secretary's salary	3,000 00	
Clerk's salary	1,500 00	
		$24,022 51
Balance reverting to general fund		$477 49

INDIANA STATE BOARD OF HEALTH—LABORATORY OF HYGIENE.

For Fiscal Year October 1, 1911, to September 30, 1912.

Oct.	16.	To Ben Wade, labor	$18 00
"	26.	To Robt. H. Bryson, postage stamps	100 00
"	31.	To Dr. J. P. Simonds, salary	166 67
"	31.	To Dr. Will Shimer, salary	125 00
"	31.	To Dr. Ada E. Schweitzer, salary	125 00
"	31.	To Miss H. M. Hooker, salary	50 00
"	31.	To Robt. P. Johnson, salary	75 00
"	31.	To C. L. Bartlett, salary	25 00
"	31.	To Edith Barton, salary	13 33
"	31.	To Dr. J. W. Carmack, salary	26 00
Nov.	6.	To American Medical Assn., merchandise	5 25
"	6.	To Aquos Dist. Water Co	3 00
"	6.	To W. B. Burford, merchandise	95 12
"	6.	To Adams Express Co., service	1 15
"	6.	To American Express Co., service	1 65
"	6.	To United States Express Co., service	1 86
"	6.	To The Fulton-Evans Co., merchandise	1 50
"	6.	To W. Gierke, binding books	92 45
"	6.	To Indianapolis Sanitary Co., service	3 00
"	6.	To International Instrument Co., merchandise	2 40
"	6.	To Pettis Dry Goods Co., merchandise	5 10
"	6.	To G. E. Stechert & Co., book	1 25
"	6.	To Ward Brothers Drug Co., merchandise	173 72
"	6.	To Weber Drug Co., merchandise	175 00
"	6.	To Dr. J. P. Simonds, expense	9 85
"	6.	To J. L. Anderson, expense	8 65
"	11.	To C. L. Bartlett, salary	6 00
"	16.	To Edith Barton, salary	20 00
"	18.	To Robt. H. Bryson, P. M. stamps	100 00
"	30.	To Dr. J. P. Simonds, salary	166 66
"	30.	To Dr. Will Shimer, salary	125 00
"	30.	To Dr. Ada Schweitzer, salary	125 00
"	30.	To Miss H. M. Hooker, salary	50 00
"	30.	To Miss Edith Barton, salary	20 00
"	30.	To Robt. P. Johnson, salary	75 00
"	30.	To L. B. Clore, salary	75 00
"	30.	To B. F. Wade, salary	24 00
Dec.	5.	To J. L. Anderson, expense	7 05
"	5.	To Aquos Dist. Water Co., merchandise	4 50
"	5.	To Bausch & Lomb Optical Co., merchandise	21 71
"	5.	To W. B. Burford, merchandise	21 40
"	5.	To Central Union Telephone Co., tolls	2 55
"	5.	To Adams Express Co., service	1 45
"	5.	To American Express Co., service	1 90
"	5.	To United States Express Co., service	2 00
"	5.	To International Instrument Co., merchandise	6 50
"	5.	To Joseph Gardner, merchandise	6 00

Dec.	5.	To Pettis Dry Goods Co., merchandise	$12 43
“	5.	To Smith Premier Tw. Co., merchandise	75
“	5.	To G. E. Stechert & Co., book	4 13
“	5.	To W. K. Stewart Co., book	6 50
“	5.	To Weber Drug Co., merchandise	30 00
“	16.	To B. F. Wade, labor	12 00
“	21.	To Miss Edith Barton, labor	30 00
“	31.	To Dr. J. P. Simonds, salary	166 67
“	31.	To Dr. Will Shimer, salary	125 00
“	31.	To Dr. Ada Schweitzer, salary	125 00
“	31.	To Miss H. M. Hooker, salary	50 00
“	31.	To Robt. P. Johnson, salary	75 00
“	31.	To L. B. Clore, salary	75 00
Jan.	6.	To American Toilet Supply Co., laundry	27 60
“	6.	To American Antiformin Co., merchandise	3 83
“	6.	To Aquos Dist. Water Co., merchandise	1 50
“	6.	Bausch & Lomb Optical Co., merchandsie	54 30
“	6.	To W. B. Burford, merchandise	45 20
“	6.	To Dugan-Johnson Co., merchandise	5 40
“	6.	To Adams Express Co., service	2 73
“	6.	To American Express Co., service	8 20
“	6.	To United States Express Co., service	70
“	6.	To E. H. Sargent & Co., merchandise	15 00
“	6.	To Dr. Will Shimer, expense	4 70
“	6.	To Central Union Telephone Co., tolls	25
“	6.	To Ward Bros. Drug Co., merchandise	7 50
“	6.	To Weber Drug Co., merchandise	10 00
“	6.	To H. E. Zimmer, merchandise	4 50
“	6.	To J. L. Anderson, expense	15 60
“	6.	To L. B. Clore, expense	1 15
“	6.	To G. E. Stechert & Co., journal	1 25
“	6.	To Western Union Telegraph Co., tolls	75
		Total first quarter	$3,084 39
1912.			
Jan.	12.	To Dr. J. P. Simonds, expense	$44 25
“	31.	To Dr. J. P. Simonds, salary	166 67
“	31.	To Dr. Wm. Shimer, salary	125 00
“	31.	To Dr. Ada E. Schweitzer, salary	125 00
“	31.	To Miss H. M. Hooker, salary	60 00
“	31.	To Robt. P. Johnson, salary	75 00
“	31.	To L. B. Clore, salary	75 00
Feb.	6.	To American Medical Assn., reprints	8 00
“	6.	To Aquos Dist. Water Co., Merchandise	2 00
“	6.	To Bausch & Lomb Optical Co., merchandise	19 17
“	6.	To W. B. Burford, merchandise	3 80
“	6.	To Adams Express Co., service	95
“	6.	To American Express Co., service	1 10
“	6.	To United States Express Co., service	1 35
“	6.	To Fisher-Gibson Co., merchandise	70

Feb.	6.	To Francis Pharmacy Co., merchandise	$0 10
"	6.	To The Fulton-Evans Co., merchandise	11 04
"	6.	To Henry Heil, Chemical Co., merchandise	2 60
"	6.	To Kingan & Co., merchandise	6 55
"	6.	To Dr. Wm. Shimer, binding book	3 00
"	6.	To Weber Drug Co., merchandise	15 00
"	6.	To J. L. Anderson, expense	12 40
"	29.	To Dr. J. P. Simonds, salary	166 66
"	29.	To Dr. Will Shimer, salary	125 00
"	29.	To Dr. Ada E. Schweitzer, salary	125 00
"	29.	To Miss H. M. Hooker, salary	60 00
"	29.	To Miss Mildred Hooker, salary	23 33
"	29.	To Robt. P. Johnson, salary	75 00
"	29.	To L. B. Clore, salary	75 00
Mar.	2.	To B. F. Wade, labor	12 00
"	8.	To J. L. Anderson, expense	8 45
"	8.	To Bausch & Lomb Optical Co., merchandise	1 00
"	8.	To Wm. B. Burford, merchandise	103 20
"	8.	To L. B. Clore, expense	1 75
"	8.	To Dr. Wm. S. Shimer, expense	4 20
"	8.	To Adams Express Co., services	1 20
"	8.	To American Express Co., services	3 60
"	8.	To United States Express Co., services	1 10
"	8.	To The Francis Pharmacy Co., merchandise	1 25
"	8.	To International Instrument Co., merchandise	9 50
"	8.	To Pettis Dry Goods Co., merchandise	1 70
"	8.	To W. K. Stewart Co., books	8 45
"	8.	To G. E. Stechert & Co., books	30 40
"	8.	To The Johns-Hopkins Press, journal	2 00
"	31.	To Dr. J. P. Simonds, salary	166 67
"	31.	To Dr. Will Shimer, salary	125 00
"	31.	To Dr. Ada E. Schweitzer, salary	125 00
"	31.	To Miss H. M. Hooker, salary	60 00
"	31.	To Robt. P. Johnson, salary	75 00
"	31.	To L. B. Clore, salary	75 00
Apr.	5.	To American Toilet Supply Co., laundry	26 95
"	5.	To American Antiformin Co., merchandise	6 00
"	5.	To Aquos Dist. Water Co,. merchandise	4 00
"	5.	To Wm. B. Burford, merchandise	3 05
"	5.	To Adams Express Co., service	1 20
"	5.	To American Express Co., service	1 10
"	5.	To National Express Co., service	30
"	5.	To United States Express Co., service	40
"	5.	To W. K. Stewart Co., books	3 40
"	5.	To Weber Drug Co., merchandise	25 00
"	5.	To Whitall Tatum Co., merchandise	1 17
"	5.	To H. E. Zimmer, merchandise	2 40
"	5.	To Dr. Wm. Shimer, expense	3 50
"	5.	To J. L. Anderson, expense	19 75
		Total second quarter	$2,823 36

Apr.	22.	To Dr. J. P. Simonds, expense	$30 75
"	30.	To Dr. J. P. Simonds, salary	166 67
"	30.	To Dr. Wm. Shimer, salary	125 00
"	30.	To Dr. Ada E. Schweitzer, salary	125 00
"	30.	To Miss Hervey Hooker, salary	60 00
"	30.	To L. B. Clore, salary	75 00
"	30.	To Robt. P. Johnson, salary	75 00
May	9.	To Aquos Dist. Water Co., merchandise	2 00
"	9.	To Bausch & Lomb Optical Co., merchandise	47 91
"	9.	To W. B. Burford, merchandise	78 89
"	9.	To Adams Express Co., service	3 08
"	9.	To American Express Co., service	80
"	9.	To National Express Co., service	30
"	9.	To Francis Pharmacy Co., merchandise	3 80
"	9.	To Indianapolis Tent and Awning Co., labor	50
"	9.	To Journal Med. Research, subscription	4 00
"	9.	To Parke Davis & Co., merchandise	90
"	9.	To Pettis Dry Goods Co., merchandise	5 04
"	9.	To G. E. Stechert & Co., books	12 85
"	9.	To Dr. J. P. Simonds, expense	8 80
"	9.	To J. L. Anderson, expense	16 60
"	9.	To R. H. Bryson, P. M., stamps	100 00
"	31.	To Dr. J. P. Simonds, salary	166 66
"	31.	To Dr. Wm. Shimer, salary	125 00
"	31.	To Dr. Ada E. Schweitzer, salary	125 00
"	31.	To Miss H. M. Hooker, salary	60 00
"	31.	To L. B. Clore, salary	75 00
"	31.	To Robt. P. Johnson, salary	75 00
June	8.	To Aquos Dist. Water Co., merchandise	4 00
"	8.	To W. H. Bass Photo Co., merchandise	5 60
"	8.	To Bausch & Lomb Optical Co., merchandise	37 74
"	8.	To W. B. Burford, merchandise	34 34
"	8.	To H. T. Duncan, guinea pigs	8 00
"	8.	To Adams Express Co., service	3 10
"	8.	To American Express Co., service	1 05
"	8.	To National Express Co., service	1 74
"	8.	To United States Express Co., service	35
"	8.	To J. I. Holcomb Mfg. Co., merchandise	9 62
"	8.	To Indianapolis Sanitary Co., service	12 00
"	8.	To The H. Lieber Co., merchandise	90
"	8.	To Improved Mailing Case Co., merchandise	263 55
"	8.	To Pettis Dry Goods Co., merchandise	1 65
"	8.	To G. E. Stechert & Co., journal	3 75
"	8.	To Ward Bros. Drug Co., merchandise	11 94
"	8.	To Dr. J. P. Simonds, expense	19 70
"	8.	To Dr. Wm. Shimer, expense	3 10
"	8.	To J. L. Anderson, expense	11 95
"	30.	To Dr. J. P. Simonds, salary	166 67
"	30.	To Dr. Wm. Shimer, salary	125 00
"	30.	To Dr. Ada E. Schweitzer, salary	125 00
"	30.	To Miss H. M. Hooker, salary	60 00

June	30.	To L. B. Clore, salary	$75 00
“	30.	To Robt. P. Johnson, salary	75 00
		Total for third quarter	$2,630 30
July	12.	To Am. Toilet Supply Co., laundry	$27 50
“	12.	To Aquos Dist. Water Co., merchandise	4 00
“	12.	To W. B. Burford, merchandise	28 00
“	12.	To American Express Co., service	1 05
“	12.	To National Express Co., service	1 85
“	12.	To United States Express Co., service	1 00
“	12.	To Improved Mailing Case Co., merchandise	29 06
“	12.	To Indiana Reduction Co., service	12 00
“	12.	To International Instrument Co., merchandise	4 40
“	12.	To J. L. Anderson, expense	13 48
“	12.	To Weber Drug Co., merchandise	25 00
“	31.	To Dr. J. P. Simonds, salary	166 67
“	31.	To Dr. Wm. Shimer, salary	125 00
“	31.	To L. B. Clore, salary	75 00
“	31.	To Miss H. M. Hooker, salary	60 00
“	31.	To Robt. P. Johnson, salary	75 00
Aug.	12.	To Robt. H. Bryson, P. M., stamps	50 00
“	12.	To American Medical Assn., reprints	5 00
“	12.	To Aquos Distilled Water Co., merchandise	2 00
“	12.	To Adams Express Co., service	25
“	12.	To American Express Co., service	1 75
“	12.	To United States Express Co., service	60
“	12.	To Indiana Reduction Co., service	13 50
“	12.	To Pettis Dry Goods Co., merchandise	7 54
“	12.	To G. E. Stechert & Co., books	5 63
“	12.	To W. K. Stewart Co., books	1 50
“	26.	To Dr. J. P. Simonds, expense	6 55
“	26.	To Miss Hattie Joplin, services	12 50
“	31.	To Dr. J. P. Simonds, salary	166 66
“	31.	To Dr. Wm. Shimer, salary	125 00
“	31.	To L. B. Clore, salary	75 00
“	31.	To Miss H. M. Hooker, salary	47 00
“	31.	To Robt. P. Johnson, salary	75 00
Sept.	6.	To Aquos Dist. Water Co., merchandise	4 00
“	6.	To Adams Express Co., service	2 00
“	6.	To American Express Co., service	1 60
“	6.	To Indiana Reduction Co., service	13 50
“	6.	To Pettis Dry Goods Co., merchandise	7 68
“	6.	To Remington Typewriter Co., merchandise	50
“	6.	To Dr. Wm. Shimer, expense	2 05
“	6.	To J. L. Anderson, expense	5 15
“	6.	To G. E. Stechert, journal	3 75
“	6.	To Ward Bros. Drug Co., merchandise	2 00
“	30.	To American Toilet Supply Co., laundry	20 50
“	30.	To Miss H. M. Hooker, extra work in July	13 00

Sept.	30.	To G. E. Stechert & Co., journal	$3 75
“	30.	To Dr. Will Shimer, salary	166 67
“	30.	To Dr. L. W. Barry, salary	125 00
“	30.	To L. B. Clore, salary	10 00
“	30.	To Miss H. M. Hooker, salary	60 00
“	30.	To Robt. P. Johnson, salary	75 00
		Total for fourth quarter	$1,760 64

Appropriation		$10,000 00
Expense first quarter	$3,084 39	
Expense second quarter	2,323 36	
Expense third quarter	2,630 30	
Expense fourth quarter	1,760 64	
		9,798 69
Balance reverting to general fund		$201 31

PURE FOOD AND DRUG LABORATORY.

For Fiscal Year Beginning October 1, 1911, and Ending September 30, 1912.

Oct.	6.	To Robt. H. Bryson, stamps	$100 00
“	31.	To H. E. Barnard, salary	208 33
“	31.	To H. E. Bishop, salary	125 00
“	31.	To I. L. Miller, salary	125 00
“	31.	To W. D. McAbee, salary	100 00
“	31.	To Edith Hoffman, salary	50 00
“	31.	To A. W. Bruner, salary	100 00
“	31.	To B. W. Cohn, salary	100 00
“	31.	To F. W. Tucker, salary	100 00
“	31.	To John Owens, salary	100 00
“	31.	To John T. Willett, salary	83 33
“	31.	To J. C. Diggs, salary	75 00
Nov.	6.	To H. E. Barnard, expense	19 50
“	6.	To A. W. Bruner, expense	68 55
“	6.	To B. W. Cohn, expense	11 74
“	6.	To F. W. Tucker, expense	52 34
“	6.	To John Owens, expense	99 72
“	6.	To John T. Willett, expense	66 18
“	6.	To W. B. Burford, merchandise	388 30
“	6.	To Adams Express Co., service	6 55
“	6.	To American Express Co., service	2 30
“	6.	To United States Express Co., service	1 30
“	6.	To Hampton Printing Co., merchandise	45 72
“	6.	To Pittman-Myers Co., merchandise	3 12
“	6.	To Western Union Telegraph Co., tolls	7 09
“	30.	To H. E. Barnard, salary	208 34
“	30.	To H. E. Bishop, salary	125 00
“	30.	To I. L. Miller, salary	125 00

Nov.	30.	To W. D. McAbee, salary	$116 67
"	30.	To J. C. Diggs, salary	75 00
"	30.	To Edith Hoffman, salary	50 00
"	30.	To A. W. Bruner, salary	100 00
"	30.	To B. W. Cohn, salary	100 00
"	30.	To F. W. Tcker, salary	100 00
"	30.	To John Owens, salary	100 00
"	30.	To John T. Willett, salary	83 83
Dec.	5.	To H. E. Barnard, expense	33 67
"	5.	To A. W. Bruner, expense	52 45
"	5.	To B. W. Cohn, expense	10 98
"	5.	To F. W. Tucker, expense	54 77
"	5.	To John Owens, expense	91 09
"	5.	To John T. Willett, expense	58 56
"	5.	To W. B. Burford, merchandise	11 40
"	5.	To The Chemical Engineer, subscription	2 00
"	5.	To The Druggists Circular, subscription	1 50
"	5.	To Eimer & Amend, merchandise	35 47
"	5.	To Adams Express Co., service	1 70
"	5.	To Pittman-Myers Co., merchandise	4 79
"	31.	To H. E. Barnard, salary	208 33
"	31.	To H. E. Bishop, salary	125 00
"	31.	To W. D. McAbee, salary	116 66
"	31.	To J. C. Diggs, salary	75 00
"	31.	To Edith Hoffman, salary	50 00
"	31.	To Emma Crandall, salary	50 00
"	31.	To A. W. Bruner, salary	100 00
"	31.	To B. W. Cohn	100 00
"	31.	To F. W. Tucker, salary	100 00
"	31.	To John Owens, salary	100 00
"	31.	To John T. Willett, salary	83 34
Jan.	6.	To H. E. Barnard, expense	76 87
"	6.	To A. W. Bruner, expense	57 40
"	6.	To B. W. Cohn, expense	22 53
"	6.	To F. W. Tucker, expense	62 98
"	6.	To John Owens, expense	77 12
"	6.	To John T. Willett, expense	62 62
"	6.	To American Toilet Supply Co., laundry	10 80
"	6.	To Standard Calorimeter Co., merchandise	77
"	6.	To Eimer & Amend, merchandise	229 45
"	6.	To Adams Express Co., service	2 85
"	6.	To American Express Co., service	6 75
"	6.	To F. H. Langsenkamp, repairs	2 75
"	6.	To Pittman-Myers Co., merchandise	12 48
		Expense for first quarter	$5,314 44

Jan.	15.	To Robt. H. Bryson, postage stamps	$100 00
"	15.	To H. E. Barnard, expense	29 16
"	31.	To H. E. Barnard, salary	208 33

Jan.	31.	To H. E. Bishop, salary	$125	00
"	31.	To W. D. McAbee, salary	116	67
"	31.	To J. C. Diggs, salary	75	00
"	31.	To Edith Hoffman, salary	60	00
"	31.	To Emma Crandall, salary	50	00
"	31.	To A. W. Bruner, salary	100	00
"	31.	To B. W. Cohn, salary	100	00
"	31.	To F. W. Tucer, salary	100	00
"	31.	To John Owens, salary	100	00
"	31.	To John T. Willett, salary	83	33
Feb.	6.	To A. W. Bruner, expense	71	25
"	6.	To B. W. Cohn, expense	14	98
"	6.	To F. W. Tucker, expense	78	03
"	6.	To John Owens, expense	91	87
"	6.	To John T. Willett, expense	76	74
"	6.	To Adams Express Co., service	3	95
"	6.	To American Express Co., service	5	20
"	6.	To United States Express Co., service	1	06
"	6.	To The Sanborn Electric Co., merchandise		48
"	6.	To The Railroad Transfer Co., drayage	1	25
"	6.	To The W. H. Anderson Co., books	7	50
"	6.	To H. E. Barnard, expense	18	90
"	6.	To W. H. Bass Photo Co., merchandise	12	40
"	6.	To The H. Lieber Co., merchandise		45
"	6.	To Pittman-Myers Co., merchandise	10	46
"	6.	To F. P. Smith & Co., merchandise		20
"	6.	To The Standard Calorimeter Co., merchandise		37
"	29.	To H. E. Barnard, salary	208	34
"	29.	To H. E. Bishop, salary	125	00
"	29.	To W. D. McAbee, salary	116	67
"	29.	To J. C. Diggs, salary	75	00
"	29.	To Edith Hoffman, salary	60	00
"	29.	To Emma Crandall, salary	33	35
"	29.	To A. W. Bruner, salary	100	00
"	29.	To B. W. Cohn, salary	100	00
"	29.	To F. W. Tucker, salary	100	00
"	29.	To John T. Willett, salary	83	38
Mar.	8.	To H. E. Barnard, expense	22	57
"	8.	To B. W. Cohn, expense	19	84
"	8.	To F. W. Tucker, expense	53	71
"	8.	To John T. Willett, expense	62	86
"	8.	To A. W. Bruner, expense	58	15
"	8.	To Adams Express Co., service	2	35
"	8.	To American Express Co., service	3	20
"	8.	To National Express Co., service		30
"	8.	To F. H. Langsenkamp, merchandise	2	35
"	8.	To Ralph N. Smith, Atty., transcript	4	75
"	8.	To The Star Store, merchandise	3	60
"	8.	To G. E. Stechert & Co., books	18	85
"	8.	To Western Union Telegraph Co., service	3	22

Mar.	31.	To H. E. Barnard, salary	$208	33
“	31.	To H. E. Bishop, salary	125	00
“	31.	To W. D. McAbee, salary	125	00
“	31.	To J. C. Diggs, salary	75	00
“	31.	To Edith Hoffman, salary	60	00
“	31.	To A. W. Bruner, salary	100	00
“	31.	To B. W. Cohn, salary	100	00
“	31.	To F. W. Tucker, salary	100	00
“	31.	To John T. Willett, salary	83	34
Apr.	5.	To H. E. Barnard, expense	47	60
“	5.	To A. W. Bruner, expense	63	60
“	5.	To B. W. Cohn, expense	6	14
“	5.	To F. W. Tucker, expense	57	00
“	5.	To John T. Willett, expense	70	37
“	5.	To American Toilet Supply Co., laundry	3	75
“	5.	To W. B. Burford, merchandise	26	05
“	5.	To Adams Express Co., service		65
“	5.	To American Express Co., service	1	00
“	5.	To United States Express, service	1	65
“	5.	To L. E. Morrison & Co., grips	10	00
“	5.	To Pittman-Myers Co., merchandise	10	07
		Total expense second quarter	$4,169	57
Apr.	19.	To H. E. Bishop, expense	$10	30
“	19.	To B. W. Cohn, expense	63	85
“	25.	To R. H. Bryson, stamps	100	00
“	30.	To H. E. Barnard, salary	208	33
“	30.	To H. E. Bishop, salary	125	00
“	30.	To W. D. McAbee, salary	125	00
“	30.	To J. C. Diggs, salary	75	00
“	30.	To Edith Hoffman, salary	60	00
“	30.	To A. W. Bruner, salary	100	00
“	30.	To B. W. Cohn, salary	100	00
“	30.	To F. W. Tucker, salary	100	00
“	30.	To John T. Willett, salary	83	33
“	30.	To C. L. Hutchens, salary	75	00
May	9.	To H. E. Barnard, expense	4	25
“	9.	To A. W. Bruner, expense	62	35
“	9.	To B. W. Cohn, expense	7	85
“	9.	To F. W. Tucker, expense	61	60
“	9.	To John T. Willett, expense	81	58
“	9.	To C. L. Hutchens, expense	39	90
“	9.	To W. B. Burford, merchandise	23	85
“	9.	To Adams Express Co., service	1	20
“	9.	To American Express Co., service	2	80
“	9.	To United States Express Co., service		95
“	9.	To W. K. Stewart Co., merchandise	36	00
“	31.	To H. E. Barnard, salary	208	34
“	31.	To H. E. Bishop, salary	125	00

May	31.	To W. D. McAbee, salary	$125 00
"	31.	To J. C. Diggs, salary	75 00
"	31.	To Edith Hoffman, salary	60 00
"	31.	To A. W. Bruner, salary	100 00
"	31.	To B. W. Cohn, salary	100 00
"	31.	To F. W. Tucker, salary	100 00
"	31.	To J. T. Willett, salary	83 33
"	31.	To C. L. Hutchens, salary	75 00
June	8.	To P. Blakiston's Son & Co., merchandise	2 00
"	8.	To Farmers Society of Equity, merchandise	2 25
"	8.	To W. B. Burford, merchandise	57 31
"	8.	To Adams Express Co., service	4 65
"	8.	To Pittman-Myers Co., merchandise	12 63
"	8.	To H. E. Barnard, expense	102 69
"	8.	To A. W. Bruner, expense	60 00
"	8.	To B. W. Cohn, expense	52 80
"	8.	To F. W. Tucker, expense	56 75
"	8.	To J. T. Willett, expense	81 90
"	8.	To O. L. Hutchens, expense	49 15
"	30.	To H. E. Barnard, salary	208 33
"	30.	To H. E. Bishop, salary	125 00
"	30.	To W. D. McAbee, salary	125 00
"	30.	To J. C. Diggs, salary	75 00
"	30.	To Edith Hoffman, salary	60 00
"	30.	To A. W. Bruner, salary	100 00
"	30.	To Bert W. Cohn, salary	100 00
"	30.	To F. W. Tucker, salary	100 00
"	30.	To John T. Willett, salary	100 00
"	30.	To C. L. Hutchens, salary	75 00
July	2.	To H. E. Barnard, expense	6 29
"	2.	To W. D. McAbee, expense	2 50
"	2.	To A. W. Bruner, expense	62 95
"	2.	To B. W. Cohn, expense	38 87
"	2.	To F. W. Tucker, expense	59 50
"	2.	To J. T. Willett, expense	68 75
"	2.	To O. L. Hutchens, expense	52 35
		Total expense third quarter	$4,441 46
July	12.	To American Toilet Supply Co., laundry	$3 75
"	12.	To Commercial Distilling Co., alcohol	25 73
"	12.	To American Express Co., service	70
"	12.	To W. & L. E. Gurley, U. S. weights and measures	1,448 69
"	12.	To Hampton Printing Co., merchandise	8 45
"	12.	To The Spice Mill Publ. Co., subscriptions	1 00
"	31.	To H. E. Barnard, expense	173 65
"	31.	To H. E. Barnard, salary	208 33
"	31.	To H. E. Bishop, salary	125 00
"	31.	To W. D. McAbee, salary	125 00
"	31.	To J. O. Diggs, salary	75 00

July	31.	To Edith Hoffman, salary	$60 00
“	31.	To A. W. Bruner, salary	100 00
“	31.	To C. L. Hutchens, salary	75 00
“	31.	To James Brown, salary	75 00
Aug.	12.	To A. W. Bruner, expense	60 95
“	12.	To B. W. Cohn, expense	39 10
“	12.	To C. L. Hutchens, expense	54 42
“	12.	To F. W. Tucker, expense	66 40
“	12.	To J. T. Willett, expense	58 05
“	12.	To W. B. Burford, merchandise	37 04
“	12.	To Adams Express Co., service	25
“	12.	To American Express Co., service	5 52
“	12.	To United States Express Co., service	2 86
“	12.	To Pittman-Myers Co., merchandise	64 45
“	12.	To G. E. Stechert & Co., journals	12 00
“	12.	To Vonnegut Hardware Co., merchandise	60
“	12.	To Western Union Telegraph Co., tolls	8 10
“	12.	To Francis Pharmacy Co., merchandise	80
“	12.	To Robert H. Bryson, postage stamps	100 00
“	26.	To H. E. Barnard, expense	4 55
“	26.	To H. E. Bishop, expense	29 50
“	31.	To H. E. Barnard, salary	208 34
“	31.	To H. E. Bishop, salary	125 00
“	31.	To W. D. McAbee, salary	125 00
“	31.	To J. C. Diggs, salary	125 00
“	31.	To Edith Hoffman, salary	60 00
“	31.	To Bert W. Cohn, salary	100 00
“	31.	To F. W. Tucker, salary	100 00
“	31.	To John T. Willett, salary	100 00
“	31.	To C. L. Hutchens, salary	75 00
“	31.	To James Brown, salary	75 00
Sept.	6.	To A. W. Bruner, expense	52 00
“	6.	To B. W. Cohn, expense	49 45
“	6.	To F. W. Tucker, expense	47 80
“	6.	To J. T. Willett, expense	94 85
“	6.	To C. L. Hutchens, expense	42 25
“	6.	To Pittman-Myers Co., merchandise	21 28
“	30.	To H. E. Barnard, expense	98 01
“	30.	To A. W. Bruner, expense	70 85
“	30.	To B. W. Cohn, expense	7 62
“	30.	To F. W. Tucker, expense	57 26
“	30.	To John T. Willett, expense	78 45
“	30.	To American Toilet Supply Co., laundry	3 75
“	30.	To Arnold Reporting Co., service	6 10
“	30.	To W. B. Burford, merchandise	148 74
“	30.	To Fertig & Kevers, merchandise	1 50
“	30.	To National Express Co., service	1 00
“	30.	To W. K. Stewart Co., book	11 20
“	30.	To W. D. McAbee, expense	19 15
“	30.	To G. E. Stechert & Co., journal	5 50

Sept. 30.	To H. E. Barnard, expense	$5 35
" 30.	To H. E. Barnard, salary	208 33
" 30.	To H. E. Bishop, salary	125 00
" 30.	To W. D. McAbee, salary	125 00
" 30.	To J. C. Diggs, salary	100 00
" 30.	To Edith Hoffman, salary	60 00
" 30.	To A. W. Bruner, salary	100 00
" 30.	To B. W. Cohn, salary	100 00
" 30.	To F. W. Tucker, salary	100 00
" 30.	To John T. Willett, salary	100 00
" 30.	To C. L. Hutchens, salary	75 00
	Total expense fourth quarter	$6,058 67

Appropriation		$20,000 00
April 16 By cash for sale of canoe		50 00
Total		$20,050 00
Expense first quarter	$5,314 44	
Expense second quarter	4,169 57	
Expense third quarter	4,441 46	
Expense fourth quarter	6,058 67	
Total expense		$19,984 14
Balance reverting to general fund		$65 86

INDIANA STATE BOARD OF HEALTH—WATER LABORATORY.

For Fiscal Year October 1, 1911, to September 30, 1912.

Oct. 31.	To Jay A. Craven, salary	$116 66
" 31.	To Mrs. Florence Vollrath, salary	50 00
" 31.	To Cullen Thomas, salary	30 00
" 31.	To A. R. Tucker, salary	25 00
" 31.	To Philip Brodus, salary	50 00
Nov. 6.	To Jay A Craven, expense	61 88
" 6.	To Adams Express Co., service	1 00
" 6.	To American Express Co., service	90
" 6.	To United States Express Co., service	90
" 6.	To Frank H. Prunk, merchandise	4 00
" 30.	To Jay A. Craven, salary	116 67
" 30.	To Mrs. Florence Vollrath, salary	50 00
" 30.	To G. C. Thomas, salary	30 00
" 30.	To A. R. Tucker, salary	25 00
" 30.	To Philip Brodus, salary	50 00
Dec. 5.	To J. A. Craven, expense	5 85
" 5.	To Engineering Record, subscription	3 00
" 5.	To American Express Co., service	4 60
" 5.	To United States Express Co., service	3 35
" 31.	To J. A. Craven, salary	116 67

Dec.	31.	To Mrs. Florence Vollrath, salary	$50 00
"	31.	To G. C. Thomas, salary	30 00
"	31.	To A. R. Tucker, salary	25 00
"	31.	To Philip Brodus, salary	50 00
Jan.	6.	To American Toilet Supply Co., laundry	3 75
"	6.	To Joe Ardapple, drayage of boat and storage	10 00
"	6.	To Harmon & Hall, merchandise	2 90
"	6.	To The H. Lieber Co., merchandise	12 68
"	6.	To United States Express Co., service	1 96
		Expense first quarter	$931 27
Jan.	31.	To J. A. Craven, salary	$116 67
"	31.	To Mrs. Florence Vollrath, salary	60 00
"	31.	To G. C. Thomas, salary	30 00
"	31.	To A. R. Tucker, salary	25 00
"	31.	To Philip Brodus, salary	50 00
Feb.	6.	To W. B. Burford, merchandise	1 14
"	6.	To The H. Lieber Co., merchandise	1 50
"	29.	To Jay A. Craven, salary	116 66
"	29.	To Mrs. Florence Vollrath, salary	60 00
"	29.	To G. C. Thomas, salary	30 00
"	29.	To A. R. Tucker, salary	25 00
"	29.	To Philip Brodus, salary	50 00
Mar.	8.	To J. A. Craven, expense	23 95
"	8.	To Brimson-Wright Hood Co., merchandise	2 80
"	8.	To United States Express Co., service	82
"	8.	To F. H. Langsenkamp, merchandise	3 15
"	8.	To Lake Michigan Water Com. reports	50 00
"	8.	To The Sanborn Electric Co, merchandise	1 20
"	31.	To J. A. Craven, salary	116 67
"	31.	To Mrs. Florence Vollrath, salary	60 00
"	31.	To G. C. Thomas, salary	30 00
"	31.	To A. R. Tucker, salary	25 00
"	31.	To Philip Brodus, salary	50 00
Apr.	5.	To J. A. Craven, expense	13 00
"	5.	To American Toilet Supply Co., laundry	12 90
"	5.	To Bash's Seed Store, merchandise	3 00
"	5.	To The H. Lieber Co., merchandise	6 19
"	5.	To Pittsburgh Filter Mfg. Co., merchandise	15 00
		Expense second quarter	$979 65
Apr.	19.	To J. A. Craven, expense	$22 60
"	30.	To J. A. Craven, salary	116 67
"	30.	To Mrs. Florence Vollrath, salary	60 00
"	30.	To G. C. Thomas, salary	30 00
"	30.	To A. R. Tucker, salary	25 00
"	30.	To Philip Brodus, salary	50 00
May	9.	To J. A. Craven, expense	4 90

May	9.	To Central Supply Co., merchandise	$7 85
"	9.	To Kingan & Co., merchandise	27 72
"	9.	To John Lees, merchandise	10 00
"	9.	To The H. Lieber Co., merchandise	1 80
"	9.	To Frank H. Prunk, merchandise	1 70
"	29.	To H. L. Craigmile, houseboat	230 00
"	31.	To J. A. Craven, salary	125 00
"	31.	To Mrs. Florence Vollrath, salary	60 00
"	31.	To G. C. Thomas, salary	30 00
"	31.	To A. R. Tucker, salary	25 00
"	31.	To Philip Brodus, salary	50 00
June	8.	To American Express Co., service	2 50
"	8.	To United States Express Co., service	95
"	8.	To The H. Lieber Co., merchandise	5 46
"	8.	To McGraw Hill Book Co., book	6 00
"	8.	To The W. H. Mullins Co., rowboat	41 00
"	8.	To E. H. Sargent & Co., merchandise	29 65
"	12.	To J. A. Craven, expense	30 81
"	30.	To J. A. Craven, salary	125 00
"	30.	To Mrs. Florence Vollrath	60 00
"	30.	To G. C. Thomas, salary	30 00
"	30.	To A. R. Tucker, salary	25 00
"	30.	To Philip Brodus, salary	50 00
"	20.	To John C. Diggs, expense	23 12
"	20.	To Chas. F. Coffin, expense	15 00
July	2.	To J. A. Craven, expense	58 53
"	2.	To J. C. Diggs, expense	5 16
		Total expense third quarter	$1,386 42

July	12.	To American Toilet Supply Co., laundry	$10 50
"	12.	To Wm. B. Burford, merchandise	6 50
"	12.	To H. L. Craigmile, merchandise	15 05
"	12.	To Adams Express Co., service	6 29
"	12.	To United States Express Co., service	3 10
"	12.	To Pittman-Myers Co., merchandise	5 60
"	12.	To Royal Brothers, merchandise	34 95
"	12.	To Jay A. Craven, expense	69 93
"	31.	To J. A. Craven, salary	125 00
"	31.	To Mrs. Florence Vollrath	60 00
"	31.	To G. C. Thomas, salary	30 00
"	31.	To A. R. Tucker, salary	25 00
"	31.	To Philip Brodus, salary	50 00
Aug.	12.	To J. A. Craven, expense	79 32
"	12.	To The A. Kiefer Drug Co., merchandise	24 18
"	12.	To The H. Lieber Co., merchandise	3 89
"	12.	To E. H. Sargent & Co., merchandise	29 90
"	27.	To J. A. Craven, expense	80 06
"	27.	To A. R. Tucker, expense	13 01
"	31.	To J. A. Craven, salary	125 00

Aug. 31.	To Mrs. Florence Vollrath, salary	$60 00
“ 31.	To G. C. Thomas, salary	30 00
“ 31.	To A. R. Tucker, salary	25 00
“ 31.	To Philip Brodus, salary	50 00
Sept. 12.	To Adams Express Co., service	1 74
“ 12.	To American Express Co., service	4 05
“ 11.	To H. E. Barnard, expense	61 93
“ 11.	To A. R. Tucker, expense	18 77
“ 17.	To A. R. Tucker, expense	51 74
“ 30.	To J. A. Craven, expense	38 80
“ 30.	To American Journal of Public health, reprints	5 00
“ 30.	To American Toilet Supply Co., laundry	7 65
“ 30.	To Bausch & Lomb Optical Co., merchandise	2 00
“ 30.	To Adams Express Co., service	1 91
“ 31.	To American Express Co., service	23 01
“ 30.	To United States Express Co., service	95
“ 30.	To W. & L. E. Gurley, merchandise	17 70
“ 30.	To The H. Lieber Co., merchandise	4 28
“ 30.	To Pittman-Myers Co., merchandise	111 34
“ 30.	To E. H. Sargent & Co., merchandise	5 00
“ 30.	To Typewriter Exchange, merchandise	63 75
“ 30.	To J. A. Craven, salary	125 00
“ 30.	To Mrs. Florence Vollrath, salary	60 00
“ 30.	To G. C. Thomas, salary	30 00
“ 30.	To A. R. Tucker, salary	40 00
“ 30.	To Philip Brodus, salary	50 00
	Total expense third quarter	$1,686 90

Appropriation		$5.000 00
Expense first quarter	$931 27	
Expense second quarter	979 65	
Expense third quarter	1,386 42	
Expense fourth quarter	1,686 90	
Total		4,984 24
Balance reverting to general fund		$15 76

INDIANA STATE BOARD OF HEALTH—CONTAGIOUS DISEASE FUND.

For Fiscal Year October 1, 1911, to September 30, 1912.

1911.		
Oct. 31.	To Dr. W. F. King, salary	$208 33
Nov. 4.	To W. F. King, expense	23 30
“ 4.	To Wm. B. Burford, merchandise	1,155 11
“ 30.	To Dr. W. F. King, salary	208 33
“ 30.	To Dr. W. F. King, expense	13 40
Dec. 31.	To Dr. W. F. King, salary	208 34

1912.			
Jan.	6.	To Wm. B. Burford, merchandise	$0 60
"	6.	To W. F. King, expense	13 25
		Total first quarter	$830 81
Jan.	12.	To Dr. Nelson Brayton, medical service	$150 00
"	31.	To Dr. W. F. King, salary	208 33
Feb.	6.	To Dr. W. F. King, expense	28 70
"	24.	To Dr. W. F. King, salary	208 33
Mar.	8.	To Dr. W. F. King, expense	23 15
"	31.	To Dr. W. F. King, salary	208 34
Apr.	1.	To Dr. W. F. King, March expense	31 50
		Total second quarter	$858 35
Apr.	30.	To. Dr. W. F. King, salary	$208 33
May	9.	To Dr. W. F. King, expense	42 35
"	31.	To Dr. W. F. King, salary	208 33
June	8.	To Dr. W. F. King, expense	26 90
"	30.	To Dr. W. F. King, salary	208 34
July	2.	To Dr. W. F. King, expense	70 40
		Total third quarter	$764 65
July	31.	To Dr. W. F. King, salary	$208 33
"	31.	To Dr. Ada E. Schweitzer, salary	125 00
Aug.	12.	To Dr. W. F. King, expense	10 30
"	31.	To Dr. W. F. King, salary	208 33
"	31.	To Dr. Ada E. Schweitzer, salary	125 00
Sept.	6.	To Dr. W. F. King, expense	15 50
"	30.	To Dr. W. F. King, salary	208 34
"	30.	To Dr. Ada Schweitzer, salary	125 00
		Total fourth quarter	$1,025 80

RECAPITULATION.

Appropriation carried over from 1911		$3,486 81
Expense first quarter	$830 31	
Expense second quarter	858 35	
Expense third quarter	764 65	
Expense fourth quarter	1,025 80	
		3,479 11
Balance reverting to general fund		$7 70

INDIANA STATE BOARD OF HEALTH—COLD STORAGE FUND.

Receipts.

1912.		
Apr. 30.	To cash for inspections	$30 00
July 31.	To cash for inspections	420 00
Sept. 12.	To cash for inspections	30 00
" 28.	To cash for inspections	10 00
	Total receipts	$490 00

Expended.

July 31.	By B. W. Cohn, salary	$100 00
" 31.	By F. W. Tucker, salary	100 00
" 31.	By John T. Willett, salary	100 00
Aug. 31.	To A. W. Bruner, salary	100 00
Sept. 30.	To C. L. Hutchens, expense	50 55
	Total expense	$450 55
	Reverting to general fund	$39 45

INDIANA STATE BOARD OF HEALTH—HYDROPHOBIA FUND.

For Fiscal Year October 1, 1911, to September 30, 1912.

Oct. 21.	To treatment of Helen Bowlby	$32 05
" 30.	To Mrs. E. E. Ayers (Cox child), room	10 50
" 30.	To Mrs. R. P. Engelken (Cox child), board	21 00
" 30.	To Otis A. Cox (Cox child), railroad fare	3 30
Nov. 1.	To Louis J. Davis, board and room	16 08
" 1.	To Alexander Brown, railroad fare	7 28
" 7.	To Mrs. W. M. Bristow, room	7 50
" 7.	To Mrs. A. McCallum, board	13 20
" 7.	To Robert Loombs, railroad fare	4 40
" 11.	To Mrs. E. E. Ayers, room	9 00
" 11.	To Mrs. R. P. Engelken, board	11 00
" 13.	To Mrs. Julia Casey, room and board	18 00
" 13.	To Robert McGinley, expense	6 50
" 18.	To Dr. A. E. Fletcher, medical service	105 00
" 18.	To Mrs. A. McCallum, board	25 20
" 18.	To E. E. Ayers, room	10 50
" 18.	To Raymond Callum, railroad fare	1 25
Dec. 8.	To Jas. A. Brown, railroad fare	4 80
" 8.	To Mrs. W. A. Silverthorn, railroad fare	14 10
" 8.	To Mrs. E. E. Ayers, room	9 00
" 8.	To R. P. Engelken, Mrs., board	13 00
" 8.	To Francis Pharmacy, merchandise	22 40
" 29.	To Dr. H. R. McKinstray, medical service	45 00
" 28.	To Mrs. Ella Crichlow, board and room	69 85
" 28.	To J. L. Anderson, expense	21 20
	Total first quarter	$501 11

Jan.	4.	To Mrs. M. E. Tullis, board	$17 00
“	4.	To Mrs. J. Trautman, room	9 00
“	4.	To Mrs. Margaret Hill, room and board	17 14
“	4.	To Mrs. Margaret Hill, laundry	1 50
“	4.	To John Garber, street car fare	2 40
“	4.	To Mrs. E. E. Ayers, room	10 00
“	4.	To R. P. Engelken, board	12 50
“	4.	To J. L. Anderson, railroad fare	12 10
“	6.	To The Francis Pharmacy Co., merchandise	3 50
“	6.	To J. C. Stokes, merchandise	1 20
“	15.	To Mrs. Ella Crichlow, room and board	32 40
“	15.	To J. L. Anderson, railroad fare, Mrs. Hunt's child	4 70
“	19.	To Dr. Asa E. Fletcher, medical service	135 00
Feb.	6.	To The Francis Pharmacy, merchandise	10 38
“	6.	To The Pettis Dry Goods Co., merchandise	45
“	17.	To Mrs. W. M. Bristow, room	19 00
“	17.	To Mrs. R. P. Engelken, board	32 75
“	17.	To J. L. Anderson, railroad fare and expense	21 25
“	19.	To Lester Birl, room and board	16 50
“	23.	To W. E. Westover, room and board	11 00
Mar.	1.	To W. E. Westover, room and board	6 30
“	1.	To Charles Meek, hotel and railroad fare	4 65
“	1.	To Mrs. J. Ryan, room and board	33 00
“	1.	To J. E. Carmin and wife, railroad fare	5 40
“	8.	To Francis Pharmacy, merchandise	9 66
“	12.	To Mrs. W. M. Bristow, room	9 00
“	12.	To Mrs. E. E. Ayers, room	3 50
“	12.	To Mrs. R. P. Engelken, board	14 00
“	12.	To Dr. F. C. Rust, railroad fare and hotel	6 70
“	28.	To J. Ryan, Mrs., board and room	45 00
“	28.	To Mrs. Nettie Bristow, room	3 00
“	28.	To Mrs. H. Folkering, room and board	12 00
“	28.	To J. L. Anderson, railroad fares	6 75
“	29.	To Dr. A. E. Fletcher, services	165 00
		Total second quarter	$693 73

Apr.	8.	To Reese Ferguson, railroad fare and hotel	$9 30
“	8.	To Orville Hurley, railroad fare and hotel	9 30
“	10.	To Mrs. R. P. Engelken, board	21 00
“	10.	To J. H. McGinness, room	5 00
“	10.	To Pettis Dry Goods Co., 2 screens	12 00
“	15.	To C. E. Coopers, son and self, railroad fares	20 40
“	24.	To Mrs. R. P. Engelken, board	19 25
“	24.	To Mrs. E. E. Ayers, rooms	9 00
“	24.	To J. H. McGinness, rooms	4 00
“	24.	To Bert D. May, rooms	2 00
“	24.	To J. L. Anderson, expense	6 34
May	9.	To Francis Pharmacy, merchandise	7 84
“	9.	To Pettis Dry Goods Co., merchandise	2 70
“	9.	To Mrs. W. M. Bristow, room	9 00

May	9.	To Mrs. R. P. Engelken, board	$24 25
"	9.	To Fred Layton, railroad fare	3 40
"	13.	To Frederick Sohn, railroad fare	26 00
"	13.	To Mrs. R. P. Engelken, board	6 25
"	21.	To Dr. A. E. Fletcher, medical service	180 00
"	22.	To Mrs. E. E. Ayers, room	9 00
"	22.	To Mrs. W. M. Bristow, room	3 00
"	22.	To Mrs. R. P. Engelken, board	28 50
"	22.	To Mrs. Mary Boner and child, railroad fare	2 75
"	22.	To W. H. Armstrong Co., merchandise	122 53
"	29.	To Imperial Hotel, room	9 00
"	29.	To Mrs. R. P. Engelen, board	10 50
"	29.	To E. G. Clawson, railroad fare	1 50
"	29.	To J. L. Anderson, expense	12 90
June	10.	To Harry Ramsey, railroad fare	1 40
"	10.	To E. A. Toney, railroad fare	13 60
"	10.	To Mrs. R. P. Engelken, board	10 50
"	10.	To Imperial Hotel, room	9 00
"	10.	To John Kostright, railroad fare	2 75
"	10.	To H. S. Crocky, board and room	30 00
"	10.	To J. L. Anderson, expense	10 50
"	10.	To Francis Pharmacy, merchandise	6 15
"	17.	To Dr. A. E. Fletcher, medical service	120 00
July	2.	To Mrs. R. P. Engelken, room and board	36 00
"	2.	To E. M. Smith (Imperial Hotel), room	18 00
"	2.	To J. L. Anderson, railroad fares	14 10
		Total third quarter	$870 71
July	10.	To Dr. A. E. Fletcher, medical service	$135 00
"	12.	To W. H. Armstrong, merchandise	3 25
"	12.	To The Francis Pharmacy, merchandise	20 74
"	18.	To Mrs. R. P. Engelken, board	21 00
"	18.	To E. M. Smith (Imperial Hotel), room	12 00
"	18.	To J. L. Anderson, railroad fare	3 12
"	25.	To Mrs. R. P. Engelken, board	10 50
"	25.	To E. M. Smith, room	10 50
"	25.	To J. L. Anderson, railroad fare	1 95
"	30.	To A. C. Elmore, room and board	15 00
"	30.	To J. L. Anderson, street car fare	2 50
Aug.	8.	To Mrs. R. P. Engelken, board	21 00
"	8.	To W. W. Miller (Imperial Hotel), room	15 00
"	8.	To J. L. Anderson, railroad fare	7 60
"	15.	To Mrs. R. P. Engelken, board	10 50
"	15.	To E. M. Smith, Imperial Hotel, room	12 00
"	15.	To J. L. Anderson, railroad fare	5 80
"	16.	To Dr. A. E. Fletcher, medical service	135 00
Sept.	3.	To J. L. Anderson, railroad fares	20 90
"	6.	To Francis Pharmacy Co., merchandise	12 73

Sept.	6.	To Pettis Dry Goods Co., merchandise	$5 94
"	6.	To Mrs. R. P. Engelken, board	66 50
"	6.	To E. M. Smith, rooms	52 50
"	18.	To Dr. A. E. Fletcher, medical service	165 00
"	30.	To Dr. William Shimer, expense	76 96
"	30.	To Francis Pharmacy, merchandise	55
"	30.	To Klee & Coleman, merchandise	2 50
"	30.	To Lewis Meier & Co., merchandise	8 70
"	30.	To Spencer Lens Co., merchandise	51 94
"	30.	To Dr. K. W. Hidy, salary	100 00
		Total fourth quarter	$1,006 68

Appropriation carried over from 1910-11		$2,998 63
Collected 1912 from dog tax		2,589 16
Total		$5,587 79
Expense first quarter	$501 11	
Expense second quarter	693 73	
Expense third quarter	870 71	
Expense fourth quarter	1,006 68	
		3,072 23
Balance to be carried to 1912-13 account		$2,515 56

RECAPITULATION.

Appropriations.

Secretary's salary (specific)	$3,000 00	
Chief Clerk's salary (specific)	1,500 00	
State Board of Health office	20,000 00	
Laboratory Hygiene (Bacteriology)	10,000 00	
Laboratory Pure Food and Drugs	20,000 00	
Water Laboratory	5,000 00	
Contagious Disease Fund	3,486 81	
Hydrophobia Fund Receipts	5,587 79	
Cold Storage Receipts	490 00	
Total appropriations		$69,064 60

Expenditures.

Secretary's salary (specific)	$3,000 00
Chief Clerk's salary (specific)	1,500 00
Office expense	19,522 51
Laboratory of Hygiene	9,798 69
Laboratory Pure Food and Drugs	19,984 14
Laboratory, Water	4,984 24
Contagious Disease Fund	3,479 11

Cold Storage Fund	$450 55	
Hydrophobia Fund	3,072 23	
Total expenditure		$65,791 47
Balance		$3,273 13
Carried to Hydrophobia Fund		2,515 56
		$757 57
April 16, by cash from sale of canoe		50 00
Total reverting to general fund		$807 57

SPECIAL MEETING OF THE STATE BOARD OF HEALTH, TO CONSIDER THE MATTER OF THE POLLUTION OF WHITE RIVER BY THE CITY OF INDIANAPOLIS.

OCTOBER 13, 1911.

Called to order by President Tucker at 2 p. m.

Present: Drs. Tucker, Davis, Boyers, Hicks and Hurty.

The following was, after consideration, unanimously adopted:

The Board of Commissioners of the County of Johnson, and the Board of Commissioners of the County of Morgan having heretofore each separately made complaints in writing to the State Board of Health, charging that the city of Indianapolis is discharging and is permitting to be discharged sewage and other waste and other befouling and deleterious matter into White River, and is thereby materially injuring for domestic use the character of the water of said river into which the same is discharged, to the injury of public health and comfort and to the detriment of the comfort and health of persons residing in the vicinity of the said water so befouled, which said written complaints are as follows, to-wit (see pages 91 to 94 this record), he said State Board of Health therefore appointed H. E. Barnard and W. F. King to make a sanitary survey of said White River between the cities of Indianapolis and Martinsville in Morgan County, and said committee after making said survey made their report thereof to said State Board of Health as follows, to-wit (see page 108, this record), and the State Board of Health having inquired into and investigated the conditions complained of finds that the charges made in said complaint are true; that said city of Indianapolis is and for a long time has been discharging and permitting to be discharged sewage and other waste and other befouling and deleterious matter into White River and is thereby materially injuring for domestic use the character of the water into which the same is discharged, to the injury of public health and comfort, and to the detriment of the comfort and health of persons residing in the vicinity of said water so befouled.

Said State Board of Health now fixes the 27th day of October, 1911, at 2 o'clock p. m., as the time when said matter will be heard before said Board at its office in the State House in Marion County, Indiana.

The following after consideration was unanimously adopted:

To Honorable Samuel Lewis Shank, Mayor, and to the City of Indianapolis:

You are hereby notified that the Board of Commissioners of the county of Johnson and of Morgan, having each heretofore made complaint to the State Board of Health of the State of Indiana, charging that the city of Indianapolis is dicharging and permitting to be discharged sewage and other waste and other befouling and deleterious matter into White River, and is thereby materially injuring for domestic use the character of the water of said river, to the injury of public health and comfort, and especially to the detriment of the health and comfort of all citizens of said Johnson and Morgan counties residing within a distance of three miles from said river, the said State Board of Health thereupon made investigation into said conditions so complained of and found the charges made in each of said complaints true; that the city of Indianapolis is and for a long time has been discharging and permitting to be discharged into said White River, sewage and other wastes and other befouling and deleterious matter, and is thereby materially injuring for domestic use the character of the water of said river to the injury of public health and comfort, and to the detriment of the comfort and health of persons residing in the vicinity of said water so befouled. Said State Board of Health further finds that the conditions produced by said acts so complained of are detrimental to public health and comfort and to the comfort and health of persons residing in the vicinity of said water so befouled.

You are further notified that a hearing on said matter will be held on the 27th of October, 1911, at 2 o'clock p. m. at the office of the Secretary of said State Board of Health in the State House in the city of Indianapolis.

After consideration, the following order was adopted:

Ordered: Dr. J. P. Simonds, Superintendent of the Laboratory of Hygiene, shall represent the State Board of Health at the meeting of the Society of American Bacteriologists in Washington, in December, his expenses to be paid from the Laboratory Fund.

Ordered: Further that the Board grant a leave of absence on full pay from December 20 to April 15, 1912. The expenses to the State shall be limited to Dr. Simond's attendance upon the meeting of the Society of the American Bacteriologists.

Ordered: Dr. F. A. Tucker, shall act as delegate from the State Board of Health to attend the conference of the State Boards of Health of Alabama, Georgia, Tennessee, Kentucky and Indiana at Nashville, Tenn., Oct. 17th, 18th, 19th, his expenses to be paid from the office appropriation of the Board.

Ordered: Drs. Hicks, Boyers and Hurty shall be delegates to and represent the State Board of Health at the annual meeting of the American Public Health Association at Havana Cuba, December 4-9, 1911, these expenses to be paid from the office appropriation of the Board.

Whereas, There exists a general and increasing sentiment in the United States in favor of the creation of a National Health Department with representation in the cabinet; and

Whereas, The conservation of public health demands the most efficient organization the government can afford; therefore, be it

Resolved, By the Indiana State Board of Health, that it strongly favors the creation of a National Health Department which will concentrate all the United States' activities having to do with the preservation of the public health; and be it further

Resolved, That a copy of this resolution be sent to our representatives in Congress and our Senators, with the urgent request that they support this cause.

SPECIAL MEETING.

OCTOBER 27, 1911.

Called to order at 2 p. m. by President Tucker.

Present: Drs. Tucker, Davis, Hicks, Hurty.

The President announced the object of the meeting was to hear the official representatives of the city of Indianapolis in answer to the notice issued at last meeting.

Dr. C. S. Woods, City Sanitarian and Mr. Harry Klausmann, City Engineer, were present and reported they were sent by the Mayor of Indianapolis.

The matter of the pollution of White River by Indianapolis and the order for said city to appear before the State Board of Health were discussed. The city representatives acknowledged that Indianapolis was grievously at fault and the present administration was ready and earnestly desired to remedy matters.

After discussion the following order was adopted:

Ordered: The city of Indianapolis shall at once begin to investigate and study methods of sanitary sewage disposal for the purpose of preventing pollution, wastes from the city of Indianapolis and the plans and methods for the disposal of all sewage and wastes shall be submitted to the State Board of Health for its approval. Said city of Indianapolis is given until June 1, 1912, to report the result of its investigations, together with such plans and methods as it may have under consideration.

RESOLUTIONS BY DR. DAVIS.

Whereas, The original purpose of the act creating the State Board of Health was to protect and conserve the health of the people of the State; and

Whereas, The State Board of Health so created has been diligent and untiring in its efforts to fulfill said purpose, having secured the passage of a pure food and drug and a state hygiene laboratory law, together with good appropriations, said laws and appropriations being necessary and essential to the successful conduction of public health work; therefore, be it

Resolved, That any separation or any effort toward separation of the Pure Food and Drug Department or the Pathological Department with their laboratories will be highly inexpedient and inimical to the best interests of the public health and the work of the State Board of Health; and be it further.

Resolved, That a copy of these resolutions be furnished to the heads of the various departments of the Board and they are hereby informed that their co-operation is required in maintaining as a unit the various departments now subject to and governed by the State Board of Health.

Seconded by Dr. Hicks. Carried.

Ordered: That Dr. Chas. A. Carter, statistician, shall proceed at a convenient time to Washington, D. C., and Harrisburg, Pennsylvania, to study the subject of the collection, the tabulation and analysis of statistics as conducted and practiced in the Department of Statistics of the United States and the State of Pennsylvania. He to make a report to the Board upon his return, with such recommendations as he may deem proper, and his expenses to be paid from the funds of the Board, it being understood that not more than ten days shall be given to this work.

REGULAR QUARTERLY MEETING OF THE INDIANA STATE BOARD OF HEALTH, TO CONSIDER AFFAIRS OF THE FIRST FISCAL QUARTER AND OF THE FOURTH STATISTICAL QUARTER OF THE YEAR, BOTH ENDING DECEMBER 31, 1911.

JANUARY 12, 1912.

Called to order by President Tucker at 2 p. m.

Present: Drs. Tucker, Boyers, Hicks and Hurty.

Minutes of the regular meeting held September 14th were read and approved. Minutes of the special meeting held October 13th, read and approved. Minutes of special meeting held October 27th read and approved.

Secretary's report for the quarter ending December 31st read and ordered received and spread of record.

REPORT OF SECRETARY FOR THE FISCAL QUARTER AND STATISTICAL QUARTER, BOTH ENDING DECEMBER 31, 1911.

The last quarter marks an era in the history of the Board, in that a larger appropriation than ever before to be used in public health work has been placed at the command of the Board. Sixteen years ago the total appropriation was $4,000 and for the fiscal year beginning October 1, 1911, the appropriation was $29,500. This, of course, increases the responsibilities of the Board and a showing commensurate with this amount must be made. According to the authorization of the Board, the Secretary has extended the size and consequently the usefulness of the traveling exhibit, adding thereto a dental exhibit, also a large number of charts, and has purchased a stereopticon which is capable of presenting both ordinary slides and moving pictures, and has employed a young man as assistant in the matter of placing the exhibit and keeping the same in order and in operating the stereopticon.

During the quarter, "Health Week" has been held in Converse, Marion, and Muncie. The coming of the holidays in December made it quite impossible to continue the exhibit work because the attention of the public is so centered upon the festivities of the season of the year. At Converse, "Health Week" was held under the auspices of the local medical society and the Women's Civic League. The exhibit was placed in the Methodist Church and was open to the public at all times, special hours being set apart for the public schools. Addresses were made to the pupils in the schools upon various phases of personal hygiene and for five days of "public health week" in Converse, two lectures were delivered every day. Every night illustrated lectures were given. The attendance was excellent. The two newspapers of the town gave their hearty support.

"Health Week" at Marion commencing Monday, November 13th, was a complete success. The exhibit was given under the auspices of the local medical society and three women's clubs. The newspapers gave every support which could be asked, the ministers' association was most active, and the attendance large. As upon like occasions, two lectures were given every day and several lectures upon various phases of personal hygiene were given to the pupils of the schools.

"Health Week" at Muncie was held commencing Monday, December 4. The same success was experienced at Muncie as at Marion and at Converse. The papers gave their hearty support, also the business men's organization, the medical society, and various women's clubs. The usual lectures were given and circulars distributed. It is plainly necessary that better work shall be done each quarter, and the secretary, having this in view, is determined to be able to report in detail advances made in all particulars. More accurate statistics shall be collected and closer work done all along the line.

ANNUAL REPORT.

The annual report of the Board for the fiscal year ending September 30, 1911, has been compiled and was presented to the Governor within the legal time specified, namely by December 1st. The manuscript has been received by the Governor, certified to by the Auditor and passed on to the printer. It is understood, as heretofore, that the statistics for the year cannot be furnished, probably until April or May, because the Statistical year is not closed until December 31st, and of necessity time must be given for the classification and tabulation of the vast amount of figures which the vital statistics represent. The report for 1910 has not yet issued from the press, but this is a matter of little importance, because the said report will be history and readable at any time. Of course it is thoroughly understood that immediate advantage is taken of statistics and facts gathered by the office as soon as they are received. The report after all consists of a record of what has been done. In other words, is history and can be reviewed at any time. Sometimes reports of a State Board of Health are received for one or two years preceding the date of their issue. Due despatch will be exercised in getting out reports, but as the work must be done with the ordinary office force, already fully engaged, more than ordinary time must be given.

SPECIAL MEETINGS.

The orders of the Board as issued October 13 have been obeyed by the Secretary, namely the transmission of a special order to the city of Indianapolis concerning the abatement of the pollution of White River. The said order was issued in accordance with the spirit of co-operation on the part of the officials of the city of Indianapolis, and hence it was received most kindly. In this connection I have to report that the engineer and health department of the city have immediately commenced the work of investigating the conditions and will undoubtedly be able to report their progress by June 1, 1912, the time allotted in said order.

The special order concerning representing the Board at the annual meeting of the American Public Health Association at Havana was not completely fulfilled. Dr. J. R. Hicks attended that meeting, but the Secretary was unable to do so on account of a severe attack of lumbago which came upon him the very day set apart for his departure. He regrets exceedingly that he was not able to attend, but is glad to report that although not present, he was elected President of this International Association.

Dr. Charles Carter has not yet made his visit of inspection and study to Washington, D. C., and Harrisburg, Pennsylvania, but will do so the third week in January. The Secretary anticipates much good to result from this visit which will eventually be shown in the better statistics collected, and especially in their better tabulation and analysis.

VITAL STATISTICS.

The vital statistics for the quarter as usually given in this report are set forth in the following tables:

SMALLPOX

	Cases.	Deaths.	Counties Invaded.
October, 1910	2	...	2
October, 1911	13	...	5
November, 1910	53	...	4
November, 1911	37	...	9
December, 1910	45	...	7
December, 1911	113	...	11
Total, 1910	100	...	13
Total, 1911	163	...	15

TYPHOID FEVER

	Cases.	Deaths.	Counties Invaded.
October, 1910	701	159	78
October, 1911	642	91	72
November, 1910	428	115	66
November, 1911	251	74	56
December, 1910	236	61	47
December, 1911	168	50	50
Total, 1910	1,365	335	191
Total, 1911	1,061	215	178

VISITS MADE BY THE SECRETARY.

Columbus—October 5th. This visit was made because of subpoena from the court of Bartholomew County to testify in a case against the State Embalming Board. The points at issue were whether or not the transportation of dead bodies' law had been violated, and also whether or not the State Embalming Board had any right to fix a standard for examinations. Upon arrival I went immediately to the court house and gave my testimony, but can not now record the outcome of the suit. Being in Columbus, I took the opportunity of asking the Superintendent of Schools for the privilege of addressing the pupils in regard to personal hygiene and the work of the State Board of Health. With the local health officer, Dr. H. H. Kamman, I made two visits to examine two conditions which were under discussion as to whether or not they affected the public health. One was the discharge of a drain from a private house, and the other was a general consideration of the projected sewer system for the city. Both of these conditions were satisfactorily adjusted.

Converse—October 8th. The object of this visit was to participate in the lectures and the general work incident to "Health Week" in Converse. There were no special incidents requiring reporting and the special account above given is all that need be said.

Liberty—November 10th. This visit was made on account of invitation of the Women's Civic League, which was inaugurating certain reforms and betterments in the city of Liberty concerning sanitation. Together with the health officer, Dr. F. T. DuBois, a thorough inspection was made of alleys and of the new water works, which were almost completed. These water works are being remodeled and improved under the direction of Prof. R. L. Sackett, Professor of Engineering, Purdue University. It is plain to be seen from the plans and the works finished at the time of my visit that Liberty will in the future have an abundant and pure supply of water. In the evening I gave an address upon "Town Sanitation" at the court house before a large audience. My address was well received, and the usual resolutions of thanks were offered.

Marion—November 12th. The object of this visit was to deliver a lay sermon in the Presbyterian Church preparatory to "Health Week" which began on the following Monday. There was a good audience and I have reasons to believe, because of the statements of those who heard the lay sermon, that good resulted from this effort.

Marion—November 17th. This visit was made to take part in the "health week" exercises at Marion. Many visits were made to business men, and lawyers to talk upon the subject of public health and to advance the same if possible. Two addresses were delivered, one in the afternoon to a body of teachers at the public hall in the Carnegie Library. In the same place in the evening an illustrated lecture was delivered to a large audience, and the usual resolutions of thanks were passed.

South Bend—November 22d. It seems to the secretary this was a very important visit for it was made upon the invitation of the South Bend Chamber of Commerce. The banquet of the Chamber of Commerce was given in the banquet hall of the Oliver Hotel, and 200 were present, most of them members of the body named. It is certainly significant that business men are becoming interested in public health work to such a degree as to have a banquet and a special meeting to consider public health problems. My address upon this occasion was entitled, "The

Conservation of Human Vitality." It dwelt particularly upon the necessity of such conservation and also upon the part which business men should play in the great work. Assurance was given by the president, also by resolutions of the organization that the address was helpful, and hearty thanks were offered. The South Bend Tribune has given two editorials upon certain phases of the secretary's address. I will say again, it is most significant for the coming success of the public health cause that a business organization like the South Bend Chamber of Commerce holds a special session to consider the subject.

Muncie.—December 5th. The object of this visit was to take part in the "Health Week" exercises, a general account of which is given above. The Secretary made two addresses, the first in the afternoon before the high school and the school teachers of the city upon the subject of personal and school hygiene. In the evening, a lecture was given before the commercial club and under its auspices upon the prevention and cure of tuberculosis. A number of visits were made with the county health commissioner, Dr. Hugh Cowing, to business men, also to the city water works, and also to a certain dump maintained by the city. The problems and questions involved were satisfactorily settled.

Rushville.—December 8th. This visit was made on account of a subpoena from the Rush County court to testify in the straw-board case. This case was action brought by the county against the straw-board mills at Carthage for polluting the creek which exists in that region. The outcome of the suit has not yet been decided.

Terre Haute—December 19th. The Secretary visited Terre Haute upon this date on account of invitation from the Vigo County Medical Society to deliver a public lecture upon the importance and advantages of medical inspection of school children. The medical society named has been working for some months with the object in view of finally securing the establishment of medical inspection. Some very curious and unusual opposition had been met. One member of the school board had openly declared the interest of the medical men was purely on account of increasing their practice. In answer to this the medical society offered to do the work of medical inspection for one year without pay and if at the end of that time it was not apparent to everyone that great good had been done, they would retire from the field and have nothing more to say. Another objection made to medical inspection was—

parents should care for their own children, and would do so if let alone. This objection, of course, is invalid for parents do not care for their own children in the majority of instances, and will not do so if let alone. The object of the law is to eventually compel them not only to educate their children, which is compulsory and necessarily so, but also to look after their health. A very good audience gathered at the assembly room of the State Normal School and my address was very kindly received. Resolutions were passed commending it and thanking the board of health and also thanking the medical society for their efforts in behalf of the people.

CORRESPONDENCE.

The correspondence of the Board is increasing, and is becoming more difficult to handle every day. Indeed, it seems sometimes impossible to keep up with it, but to this date this has been accomplished. Audiences must be given by the secretary to at least two callers every day and sometimes to as many as eight and ten. County commissioners, township trustees, town trustees, and citizens are continually appealing to the board for advice and for help. These audiences require a good deal of time on the part of the secretary and, of course, limit field work and also attention to correspondence. If it were not for the creation of the position of assistant secretary, it would be quite impossible to carry on the present volume of work. It is a pleasure to record here the very efficient assistance of Dr. William F. King. His intelligent and enthusiastic work is certainly of the very greatest value.

REPORT OF VISITS MADE BY W. F. KING, ASSISTANT SECRETARY, FOR THE QUARTER ENDING DECEMBER 31, 1911.

October 21st, I went to Shelbyville in response to a request from Dr. J. Willard Parrish, county health commissioner, to investigate some cases of poliomyelitis. In company with Dr. Parrish I visited two homes in Shelbyville and one home in the country three miles north of Shelbyville, in each of which homes a case of the disease existed. There had been some difference of opinion concerning one case and while some of the symptoms were obscure, it was undoubtedly a case of poliomyelitis of mild type. In company with Dr. Parrish I also called on the attending physicians in these cases and in conference with them a course of action was agreed upon in regard to isolation and quarantine for the purpose of preventing any further spread of the infection.

October 24th, at the request of County Superintendent of Marion County, I visited schoolhouse No. 3, Center Township, Marion County. The purpose of this visit was to test the heating and ventilation of this school building, a new system of heating and ventilation having but recently been installed. The system installed is a direct-indirect combined system of heating and ventilation and was found to be entirely inadequate so far as ventilation is concerned. The building is a four-room structure. Basing the air supply upon the volume of foul air being taken from the rooms through the foul air vents, it was found that the air was being changed in the schoolrooms on an average of once every hour, when the law requires that the air should be changed once every fifteen minutes. A report of this inspection was made to the County Superintendent with certain recommendations that if put into execution will materially increase the efficiency of the ventilation.

October 30th, at the request of Dr. C. H. Walden, health officer of New Market, I visited New Market to investigate a typhoid fever situation. A report of this investigation is to be found in the December Bulletin of the State Board. After making a sanitary inspection of the town in company with Dr. Walden I gave an address before the high school dealing almost entirely with local conditions and also met the members of the town board of trustees and a number of business men, to all of whom the situation was explained. The board of town trustees was urged to pass the model town health ordinance recommended by the State Board of Health, by means of which larger power and authority would be conferred upon the local health officer so that he could deal promptly and efficiently with the insanitary conditions of the town. At the meeting of the town board subsequent to my visit, this model health ordinance was passed and the citizens of the town are now thoroughly aroused to the seriousness of the situation and the importance of doing all that can be done to get rid of the typhoid fever that has existed in New Market during the past five or six years.

December 19th, at the request of Prof. Briggs, principal of Harrison School of Terre Haute, I visited Terre Haute and made short talks before each of the rooms of the Harrison School in the afternoon. In the evening, I delivered an illustrated lecture on the cause and prevention of tuberculosis, in the auditorium of the Harrison school, before an audience of more than 250 patrons of the school. A very great interest was manifested in this meeting and I am sure much good will result. Following the lecture at the school auditorium I appeared before the audience at the Varieties' Theater and gave a short talk upon the prevention of tuberculosis in connection with the sale of Red Cross seals in Terre Haute.

The Secretary reported a case of leprosy in the city and stated he had employed Dr. Nelson Brayton to look after the same on behalf of the State Board of Health. In this connection he presented the following report of said case of leprosy:

REPORT OF CASE OF LEPROSY BY NELSON D. BRAYTON, M. D.

INDIANAPOLIS, IND., December 27, 1911.

To the Indiana State Board of Health:

Gentlemen—Pursuant to directions of your secretary, I have the honor to report a case of leprosy (Elephantiasis Graecorum) in a resident of Indianapolis, as follows:

Name: Mrs. Lavina Blackwell.
Color: Black, widow, age sixty.
Birthplace: Hawkins County, Tennessee.
Former Residence: Knoxville, Tennessee.
Present Residence: 745 W. Twenty-fifth street, Indianapolis.

History of Patient: This woman was born in Hawkins County, Tennessee, in slave times. She was born free, as her mother was free—her father a slave. She lived in Knoxville after her thirteenth year until the last three years, when she removed to Indianapolis and made her home with her sister, Mrs. Josephine Combs, at the above address.

This patient is twice married. A grand child, Iva Gordon, by her first husband, lives with her. She has never been south of Chattanooga, where she visited once, nor north of Chicago, where she attended the World's Fair. I cannot obtain any history of the source of her contagion. None of her relatives have the disease.

Medical History: She is the mother of six children; two are living, both grown to adult life. She is the grandmother of one grandchild, Iva Gordon. Previous to being attacked with this affliction has always been well and hearty.

One year ago she noticed some blotches on face, arms and legs, and several months ago consulted a physician for an eruption which resembled *lichen planus* and for which appropriate treatment was given. Nodules first appeared on face, arms and ears three months ago, at which time the patient stopped treatment.

The patient was first seen by me December 21st, at request of my father, Dr. A. W. Brayton, and his assistant, Dr. Bernard Erdman, both of whom had recently suspected leprosy. During the last two months these slightly elevated and widely disseminated areas on face, arms and ears had made a remarkable growth; the leprous nature became apparent, presenting the classical appearance of tubercular leprosy.

There is no anaesthesia present in the case; no destruction of bone; no contractures; no perforating ulcers; no arthropathies; no involvement of mucous surfaces of mouth; no enlargement of ulnar nerves, or other signs of macular or anaesthetic leprosy.

There is no history or clinical signs of syphilis or tuberculosis.

Bacteriological Examinations: On December 23d I again visited the patient, preparing smears from various tubercles which showed the bacillus of leprosy.

December 24th, smears from cut section of tubercles on the ear were examined and found positive.

December 26th, smears from nodule on the neck were also positive for lepra bacilli, this time smears being taken in the presence of Dr. Hurty and stained by both Dr. Shimer, pathologist of the State Board, and myself, in the Board of Health Laboratory.

This case in no way differs from similar cases seen and studied by me in the following hospitals and lepra sanitaria of the world: namely, (1) the Skin and Cancer Hospital, and (2) Blackwell Island Hospital, of New York City; (3) The Louisiana Leper Home, under care of Dr. Isadore Dyer of New Orleans; (4) The Palo Seco Leper Sanitarium at Ancon Hospital, Panama; (5) The Tumaco and Beunaventura cases of Colombia, South America, and (6) The San Francisco Leper Hospital, which I visited last summer and in which seventeen lepers, mostly Chinese were then confined.

The clinical picture in this case is convincing, the miscroscope offers irrefragible proof.

Survey of Lagrange Schoolhouse by Dr. D. W. Dryer, County Health Commissioner, December 12, 1911:

The site is a rather commanding hill in the southwest part of the town and comprises more than an acre in area. Drainage is good. The building was erected some thirty-five years ago; the foundation of natural or uncut stone is very substantial. The main building above this foundation is of two-story brick, with a third story mansard style slate sidings over wood, and metal roof; the whole building was substantially built, but is top-heavy from useless ornamentation, and the third story, aside from height, is of fire-trap plan. Fronting the structure is a three-story brick tower, some twelve feet square, and carrying a fourth story mansard tower or pinnacle. This building is some 70 feet by 80 feet in size.

Extending from rear to the west an addition some 30 feet by 60 feet joins on, this building being two stories. The lower stone basement is of same height and plan as in main part, with first story of brick and upper mansard, wood frame and slated sides, metal roofed; also overloaded with doubtful ornamentation, etc. The basement is about nine feet in the clear, cemented floors, plastered ceilings, and divided by the necessary retaining and supporting walls of brick; also further divided by unnecessary wooden partitions. The basement while dry is less than five feet above ground, and with too small windows necessarily dark.

There is a battery of five furnaces in rear basement of American Foundry and Furnace Company type, of year 1896. This heats the entire building, and in very good manner, so janitor states. There are under main building in basement separate toilet rooms for the sexes, amply partitioned and well separated, and with separate approaches. Each room has twelve stall compartments, and in addition a six stall boys' urinal in their part, of marble but minimum width sides. The flushing system is automatic—intervals of about fifteen minutes, but water constantly running.

The construction by same company as above and at same dates. The basement is clean in a general way and free of any odors.

Ventilation throughout direct pressure system, seemingly very fair; augmented by open windows on occasion. There are four schoolrooms on each of two floors of main building—eight in all—averaging 25 feet by 35 feet, with 15-foot ceiling, plastered and papered. The windows are 3-grouped, old style, utterly inadequate for proper lighting, in general occupying two sides of each room, the other sides in black-boarding, etc. Entrance to each room is from central main hall.

The third or mansard story is one large hall, used by upper year high school pupils; it is a fire-trap for sure. A hazardous stairway and doubtful fire-escapes at one side only need no diagram to describe.

The lesser building of same general material, has two rooms below and two above for student purposes; with an entrance from second floor at rear from main building, this opening, however, directly into a classroom; there is also an entrance at center of building into a dividing hall on first floor—a student room at each side of hall, lower floor. Fire-trap stairs lead up to the two upper student rooms; these rooms having no fire-escape, although but two-story. Each of these four rooms is about 30 feet by 30 feet. Heating, lighting and ventilation same in quality as described.

Without going into minute details or exact dimensions, which I believe not essential to your general or perhaps exact understanding of the situation, for myself, and I think for the board of trustees in a general way, we conclude to recommend, to wit:

Unless shown not to be reasonably feasible by an expert architect the main building as to two stories of brick may be altered to conform in essentials to modern construction without razing. The site can easily be graded away down two or three feet, still leaving good slope, that giving a basement depth of around eleven feet, if floor be dropped (nine as it is) with at least seven feet above ground; ample windows then being possible.

Brick wall space can be taken away to enlarge windows more than half as compared with present, nearly three times in part. The upper mansard story to be entirely removed and with it all the "ginger-bread" effects.

The front tower taken down to conform to roof line; entrance both at outer and inner tower to be made at least double present capacity; inner wardrooms now in main hall entirely cleaned out; stairway to second floor brought forward with landing three times present size; this in general is our idea for the structure, with internals as may be needed to modernize in full.

The lesser structure likely entirely removed and a new and modern building to replace it, and upper (third floor) lost by removal. We agree that the present building is entirely inadequate, antiquated, and in part a menace; but we do not yet see that its entire destruction is advisable or necessary. We do not think so; and in this even the majority of your petitioners coincide. We shall be very glad to have you find it possible to visit us in this matter; also to advise us of or have accompany you some first-class architect. Especially is the board of trustees desirous that your findings to be in their possession at an early date.

After consideration of the above survey, the Lagrange Schoolhouse was Condemned, and the following Proclamation of Condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the high school building at Lagrange, in Lagrange County, Indiana, is unsanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore, the Indiana State Board of Health according to the statutes

Orders, That said high school building at Lagrange, in Lagrange County, Indiana, is condemned and shall not be used for school purposes, after June 15, 1912. And if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school pur poses after the said date, he or she or they shall be prosecuted as provided in the law.

Passed by the State Board of Health January 12, 1912.

Sanitary survey of schoolhouse at Barnard, Jackson Township, Putnam County, made January 1, 1912, by Dr. J. M. King, County Health Commissioner:

Site.—Yard level, not well drained. Walks not provided to closets. Closets dirty, filthy and unsanitary. Do not have proper vaults or foundations. Boys' closet party fallen over. Unsafe and should be fixed at once. No wings or urinals provided.

Building.—Two story brick, nineteen years old. Shingle roof, apparently good. Foundation brick, eighteen inches above ground.

Lower Room.—Floor fair. Light not good, but teacher thinks it all right. Plastering good but paper loose in places. Seats good. Thirty-four pupils. Leak in west wall, which probably comes from tin gutter.

Upper Room.—Floor fair, twenty-five pupils. Plastering good but paper loose in places. Seats good. Leak in west wall, which probably comes from tin gutter.

Cloak Rooms.—Good, but have no heat.

A few weeks ago it was thought that the floor of upper room was unsafe and several pupils remained away from school on that account, but since it has been examined by an architect that fear has subsided and there is no further complaint.

Recommendations.—1st. That the trustee put closets in sanitary condition and provide wings to each and install urinals in boys' closet. 2d. Provide walks to closets. 3d. Both rooms should be papered at once.

4th. Leak in wall which probably comes from gutter should be repaired at once.

After consideration of the above survey, the Barnard Schoolhouse was condemned and the following Proclamation of Condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse known as the Barnard Schoolhouse in Jackson Township, Putnam County, Indiana, is unsanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency, there, the Indiana State Board of Health according to the statutes,

Orders: That said schoolhouse, known as the Barnard Schoolhouse in Jackson Township, Putnam County, Indiana, is condemned and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city, or town school trustees or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Passed by the State Board of Health January 12, 1912.

Sanitary survey of Fredricksburg Schoolhouse, Posey Township, Washington County, Indiana, made January 1, 1912, by Dr. Chas. W. Murphy, County Health Commissioner:

Site.—The Fredricksburg schoolhouse site is approximately 186 feet by 87 feet, the long way extending north and south. It is about 200 feet east of Blue River, a meadow strip extending between the two. Just to the south and southwest of the schoolhouse, which occupies the northeast corner of the site, is the only area of comparatively level ground, being about 50 or 60 feet square. The south boundary of lot is from five to six feet lower than the level area and about 50 feet from it. The west boundary is about five feet lower than the foundation of schoolhouse and the 50-foot playground, the ground sloping west rather rapidly from each. The east line of site is comparatively level, parallels and adjoins a narrow street running north and south. The north line of site slopes gradually downward from east to west and the northwest corner of lot is the lowest and poorest drained. In this corner is a very small two-hole, filthy outhouse, not vaulted, the walls of vertical plank, not sheather, for the girls. No sign of a walk to this closet and this part of the lot must get quite muddy and wet during rainy weather. The boys' outhouse, on more elevated ground in the southwest corner is of similar construction and size, with two holes in the board or seat, which is completely covered with mud and fecal matter, making it very unsightly and filthy. No urinal trough in this—no room for one—and no sign of a walk extending to the schoolhouse.

Building.—The schoolhouse is an old two-story frame structure. The upper story being used as a Masonic lodge, a door looking west at the southwest corner of the building leads to a stairway for the second floor. The school building is in the northeast corner of the site, about 10 feet from the street on the east, and about 20 feet on the north from a cross-street. Almost entirely bare of paint, the weather-boarding looks old and dingy. Seven holes are in the south wall, one large enough to throw a cat into it. The solid stone foundation is in good condition, the joists 10 or 12 inches above the ground, which is dry. On the east side are to be seen six windows, 3 to each room and 2 doors leading out to a porch 24 feet long and 5½ feet wide. On the west side are also 6 windows, 3 to each room. There are no windows on the north or south walls of the building. All windows are of the same size and each has a light area of 30 inches by 72 inches. Each sash has 6 lights about 10 by 18 inches. Most of the lower lights are painted a light coat of white. One half-pane is out on the east side, and about one-fourth pane is gone from three panes on the west side. The oiled floors are of rough oak plank 5 inches wide, and laid very uneven. A painted wainscoting 42 inches high extends around all the walls of both rooms. The north room (principal's) measures inside, about 25 by 30 feet and the south or primary room measures approximately 21 by 29 feet. The ceiling of each room is about 11½ feet high. The walls are plastered and papered with an old, faded ingrain, 8 years old, most of it off in the south room ceiling, and hanging loose or off in many places on the walls of both rooms. The plastering is loose and off in small patches in many places in both rooms, especially around the two chimneys projecting into the rooms from the east wall, and at the sides of doors and windows. A door connects the two schoolrooms. On the north wall of the north room is a slate blackboard 30 feet by 31 inches above the wainscoting. In the south room on north wall are two slate blackboards, one 15 feet by 31 inches to the left of the door and another one 9 feet by 31 inches on the right. On south wall of south room, is another blackboard 10 feet by 31 inches. A 6-inch square post near the center of each room supports the ceiling. A few feet east of each post, is a large horizontal cast-iron wood stove. Fenders, each 3 x 4 feet of galvanized iron are on each side of stove in south room, none around stove in north room. It is about 30 inches from each fender to row of desks on each side. No cloak rooms to be seen and an insufficient number of hat and wrap strips with wooden projecting pegs are on south wall of each room. Closed water tanks with free flowing faucet are in each room. Individual drinking cups are used. Outside door of north room is nearly to pieces, 3 strips being nailed on inside to hold one of the lower panels, badly splintered, and two of the corners of the door.

There are 46 desks in north room and 46 in south room. All of them are single, look north and are in good condition. At present 45 pupils are in north room and 43 in the south room. The average width of aisles between the rows of seats is 15½ inches. In north room the passage or distance between rear seats and wall is 15½ inches, and the aisle on the west between wall and row of seats, is 16 inches. The aisles in the south room are 13 and 14 inches wide. From desks in front to blackboard varies from

2 to 5 feet. In this narrow contracted space are the recitation seats consisting of short benches 9½ inches wide, with no backs.

No system of ventilation is to be seen. Windows and doors are all closed during school hours.

The above details clearly demonstrate the insanitary condition of everything; the site too small and uneven for a suitable playground, no walks to the badly constructed outhouses, which are too small and unkept; the school building itself insufficiently lighted, insufficiently heated, poorly ventilated, with insufficient air space, all of which are conducive to ill health, the physical discomfort and restlessness of the pupils, their inability to concentrate their minds and study advantageously.

After consideration of the above sanitary survey, the following Proclamation of Condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health, that the schoolhouse known as the Fredricksburg Schoolhouse in Posey Township in Washington County, Indiana, is unsanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency, therefore, the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as the Fredricksburg Schoolhouse in Posey Township, Washington County, Indiana, is condemned and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

The Secretary presented a petition from certain employes of the Board asking a raise of ten dollars per month in their salaries. The petition was considered and discussed and it finally was

Ordered: That the salaries of the following named employes shall be increased ten dollars per month beginning January 1, 1912: Florence Vollrath, Edith Hoffman, Hervey Hooker, Fannie Stevenson, Ethel Hoffman, and Louise Lingenfelter.

The Secretary presented the following resolution:

Whereas, Proper housing will prevent much ill health, disease and immorality; therefore be it

Resolved, By the State Board of Health that it endorses and will support the housing bill which has been prepared by the Indiana Housing Association and which will be presented to the next Legislature.

The Secretary announced there would be a national conference on medical education, medical legislation and public health at

Chicago, February 28 and 29, and moved that delegates be appointed to attend the same. After discussion it was

Ordered: That Drs. Hicks and Tucker represent the State Board of Health at said conference and that their expenses be paid out of the funds of the Board.

REGULAR QUARTERLY MEETING FOR THE SECOND FISCAL AND THE FIRST CALENDAR QUARTER, BOTH ENDING MARCH 31, 1912.

April 12, 1912.

Called to order by President Tucker at 2 p. m.

Present: Drs. Tucker, Davis, Boyers, Hicks, Hurty.

Minutes of last regular meeting read and approved in each part and as a whole.

Report of Secretary read and ordered spread of record.

Report of Secretary for the Second Fiscal Quarter and the First Statistical Quarter of the Year, Ending March 31, 1912.

The work of the Board and of the Secretary has gone on without unusual incident for the last quarter. Mr. John Owens, for several years connected as an inspector with the Food and Drug Department, was transferred to the Executive Department and placed in charge of the traveling exhibit. Mr. Owens has a special aptitude for exhibit work and for all that pertains to publicity He is well educated and has been trained as a teacher. His general information is very full and he has special information in chemistry and physiology. He also has acquired much clear information in regard to medicine, and especially of preventive medicine. He makes an excellent address, talking fluently and clearly upon those subjects which pertain to the education of the people in matters concerning the public health.

The exhibit under his charge in the last quarter has visited Rockville, Brazil, Crawfordsville, Greencastle, Worthington, Bloomfield, Linton, Spencer, Edwardsport, Sullivan and Bicknell. A program was prepared for each place visited. Not less than two lectures being given every day, and one round table. Sometimes as many as two or three round tables were held. In every town visited the press gave its hearty endorsement and aid and printed favorable notices. School children were divided into classes and visited the exhibit, instructions and explanations being given them by Mr. Owens. The evening lectures are always illustrated with slides and the lecture followed with moving pictures. The moving pictures which we have at present are, "The Fly Pest," and "The Story of John Bond." The first is owned by the Board but the second is loaned by the National Tuberculosis Association and must soon be returned. Mr. Owens is assisted by Mr. George King. The secretary feels confident that this exhibit as authorized by the Board and as conducted by its orders has proven a very efficient means of educating the people and of making the work of the State Board well known and popular.

Dr. Charles Carter, as per order of the Board, visited Washington, D. C., and Harrisburg, Pa., in order to make a study of the collection, tabulation and analysis of vital statistics as conducted by the National Bureau and by the State Health Commissioner of Pennsylvania. His report is appended hereto.

VITAL STATISTICS.

The vital statistics for the quarter as usually given in this report are set forth in the following tables:

SMALL-POX.

	Cases.	Deaths.	Homes Invaded.
January, 1911	155	0	12
January, 1912	89	0	15
February, 1911	99	0	20
February, 1912	181	2	20
March, 1911	117	2	21
March, 1912	214	3	22
Total, 1911	371	2	53
Total, 1912	484	5	57

TYPHOID FEVER.

	Cases.	Deaths.	Homes Invaded.
January, 1911	115	39	35
January, 1912	131	34	34
February, 1911	94	36	26
February, 1912	264	41	28
March, 1911	91	36	26
March, 1912	214	39	34
Total, 1911	300	111	87
Total, 1912	609	114	96

VISITS MADE BY THE SECRETARY.

Rockville—January 9th. This visit was made for the purpose of inspecting the State Tuberculosis Hospital and also to attend "Health Week" at Rockville. I was unable to make the inspection of the hospital because of a terrible storm which prevented travel out to the institution for that day. I, therefore, gave my lectures only to the pupils in the high school, to the Ladies' Civic Society and in the evening an illustrated lecture upon the prevention and cure of tuberculosis. The evening audience passed a resolution of thanks to the State Board of Health for having sent the exhibition to Rockville and for the instructions given.

Greenfield—January 13th. This visit was made in obedience to a subpoena from the Hancock County Court to attend a trial which concerned the heating and ventilating of the schoolhouse at New Palestine. A few minutes after arrival at Greenfield, the court dismissed the case because of some irregularity in proceedings.

Crawfordsville—January 16th. This visit was made to attend "Health Week" in Crawfordsville. I addressed the high school students, also the Women's Club and in the evening gave the lecture entitled, "Prevention and Cure of Tuberculosis." A large audience attended all three of these lectures and I heard many favorable comments on account of the health exhibit and the lectures and instructions given.

Frankfort—January 22d. This visit was made upon invitation of the Business Men's Association to address the said association and also to make inspection of the Third Ward schoolhouse. The sanitary survey of said schoolhouse is presented at this meeting for action.

Greencastle—January 24th. This visit was made in order to attend and help out "Health Week." The usual talk was given to the high school pupils and in the afternoon to the Women's Club and in the evening, the illustrated lecture upon, "The Prevention and Cure of Tuuberculosis" was delivered. The newspaper commented most favorably upon the exhibit and I received many congratulations from citizens of Greencastle on account of the work being done by the State Board of Health.

Winchester—February 3d. This visit was made for the purpose of attending the Randolph County Farmers' Institute. I went upon invitation and gave two lectures, the same being favorably received. A vote of thanks was given and said vote of thanks also included a vote of confidence in the State Board of Health and approval of its work.

Washington—February 22d. This visit was made upon invitation of the Riley Club. The president of this club is ex-senator Ezra Mattingly. When in the Legislature, Senator Mattingly was always a friend of public health work, helping onward said work all that he possibly could. I arrived about 2 o'clock and within one-half hour afterwards addressed the high school pupils and in the evening gave my address to the Riley Club. I believe this visit was productive of good to the public health cause.

Daleville—February 29th. This visit was made upon invitation of the Daleville Women's Civic League. A large audience was present in the auditorium of the new schoolhouse, and I have every reason to believe that the lecture was appreciated because the usual vote of thanks was passed.

Ingalls—February 29th. This trip was made in order to make sanitary survey of the schoolhouse at this point, in obedience to a petition of patrons. This survey is presented for action at this meeting.

Linton—March 4th. This visit was made to attend "Health Week." The usual talks were given to the high school pupils, also to the pupils of the 7th and 8th grades, also to the usual women's organization and in the evening to a public audience.

Attica—March 6th. This visit was made because of an invitation from the Fountain and Warren County Medical Association to read a paper, to address the high school pupils, and to deliver a public lecture in the evening under the auspices of said society. The program was fulfilled in every particular, and I had the gratification of receiving many congratulations and the usual vote of thanks and approval of the work of the State Board of Health.

Hammond—March 11th. The Teachers' Association of East Chicago, of Hammond, and of Whiting invited me to give two lectures upon matters pertaining to public health and school hygiene. On account of this invitation I visited Hammond on March 11th. The lectures were duly delivered and appreciation was offered in the form of the usual resolutions.

Indiana State Board of Health:

Gentlemen—Having been given a leave of absence by your honorable body I herewith submit an account of what I attempted to do during this time.

Leaving Indianapolis December 24, 1911, I went first to Washington, D. C., where I attended the annual meeting of the Society of American

Bacteriologists, to which I was elected a member at this meeting. The papers read before this society dealt with various phases of the science of bacteriology, the majority having a definite bearing on the work of bacteriological laboratories of boards of health. I obtained a number of valuable suggestions both from the papers read and still better ones from personal conversations with various members of the society. While in Washington I spent several hours in the laboratory of the District of Columbia and in the Hygienic Laboratory of the Public Health and Marine Hospital Service. In the latter laboratory I had an opportunity to observe the preparation of the antirabic virus which this Board now uses in giving the Pasteur treatment.

After leaving Washington I spent ten days in New York City, and while there I spent considerable time in the New York Research Laboratory and at the Rockefeller Institute. At the latter place, through the courtesy of Dr. Manwaring, I had an opportunity to observe at first hand a good part of the more important investigations which are now being made in that institution.

I arrived in Boston January 10, 1912, and immediately began work in Harvard Medical School and Harvard University. In Harvard University I studied with Professor George C. Whipple who has just taken charge of the new department on Sanitary Engineering. Here most of my time was devoted to the study of vital statistics and sanitary water and sewage analyses. As a supplement to this work I spent one day at the Lawrence Experiment Station in Lawrence, Mass. Here, through the courtesy of Mr. Gage, who is in charge of the station, I was able to see at first hand the various methods of water purification and sewage disposal in actual operation.

Most of my work in Harvard Medical School was devoted to investigations of certain problems in intestinal bacteriology. I attended Dr. Rosenau's lectures on hygiene. Of even greater value than these lectures was an opportunity of close personal association with Professor Rosenau and other members of his department. During my stay I succeeded in completing about half of the work necessary to obtain the degree of Doctor of Public Health.

While in Boston I spent considerable time both in the Boston City Laboratory and the laboratory of the Massachusetts State Board of Health. I spent one afternoon at the Massachusetts Antitoxin and Vaccine Laboratory which is located near Boston. Here I had the opportunity to see practically the whole process of making diphtheria antitoxin and small-pox vaccine. One day was spent at the Boston Consumptives' Hospital. This is a somewhat unique institution, inasmuch as its aim is to take tuberculous patients out of their homes where they are likely to spread the disease and give them a comfortable place either to get well if possible or to die if necessary.

Leaving Boston on April 3d, I went to Philadelphia to attend the annual meeting of the American Association of Pathologists and Bacteriologists. This meeting was a very instructive one, but even more helpful than the papers read were the conversations with numerous prominent pathologists and bacteriologists from whom many new and helpful ideas were obtained. While in the city I visited the Pennsylvania State Laboratory and the laboratories of the University of Pennsylvania.

The trip has been exceedingly helpful and instructive to me. Everywhere I was on the lookout for new ideas and improved methods to introduce into our work here. Many such new ideas and methods were obtained and the service of our laboratory will I think be materially improved by their introduction. Even more important than mere technique is the inspiration obtained from such associations, an inspiration with which I am sure I shall be able to infect every member of the Laboratory staff.

In conclusion I wish to thank your honorable body for this courtesy and to assure you that during this leave of absence my chief aim was to obtain such information as would help me to increase the efficiency and serviceableness of our Laboratory.

Report of visit to Washington, D. C., and Harrisburg, Pennsylvania for the purpose of learning any new methods in use at the U. S. Census office and the State Board of Health at Harrisburg in the Vital Statistics Division:

To the Indiana State Board of Health:

Gentlemen—I arrived in Washington, D. C., on January 15th and I visited the U. S. Census building on Monday. I reported at the office of Dr. Wilbur, the chief statistician, who at the time was away, but returned later. I was taken in charge by Mr. Richard Lappin, the chief of the division, and was shown through each subdivision by chiefs in charge. It was unfortunate that I made my visit at this time for the reason that the work on population at the main office had been discontinued and the vital statistics division was moving back to the main building and some of the work that I wanted to investigate was not being done.

NEW TABLES.

After Dr. Wilbur's return, I took up the matter of new tables for vital statistics and the information I secured was that the committee from the A. P. H. Association was formulating new tables, and would report same for adoption later.

PUNCHING AND TABULATING MACHINES.

I considered with Mr. Lappin the installing of punching and tabulating machines. He said he would not advise tabulating machines for this office, for the reason that we did not handle enough certificates to justify it. He advised that we could use a punching machine and assort the cards by hand. I saw two of the electric punching machines which are used by them. These machines were built especially for the department and are not on the market. One electrical punching machine would be sufficient for this office for a number of years. From the number of machines piled in storage, I was impressed with the idea that the State of Indiana might secure a loan of one of these. They have a number of hand punching machines which are only used to make corrections after cards are punched by electrical machines. This department could install two hand punching

machines which could be used for deaths, births, marriages and diseases. By securing extra plates which are made of celluloid, the change is easily made. Mr. Lappin had the electrician to set up one of the tabulating machines for me to operate and it worked well. The Hollerith Tabulating Machine Co., of Washington, make a punching machine which they rent at $15.00 per month.

TRIP TO HARRISBURG, PA.

On Sunday, January 21st, I started to Harrisburg, Pa., arriving that evening. On Monday morning I called on Dr. W. R. Batt, Registrar of Vital Statistics for the State of Pennsylvania. I spent three days with him. While they have a large office force, they are not doing the work in vital statistics that Indiana is doing. Of course, they handle a number of certificates, but they do not work out monthly death rates. The work that was being done at the time of my visit was confined to morbidity, and not mortality. They use the hand punching machines, of which they have five or six. At one time they had an electrical machine rented from the Hollenrith Company, but as it was not arranged for the international system its use was discontinued. Dr. Batt informed me that the Powers Accounting Machine Company of New York would have a new machine on the market in a short time which he would adopt. He informed me that he had purchased the hand machines from the Hollenrith Company at $75 each. They also make the punch cards at 75 cents per 1,000.

They have a good system of indexing in use at Harrisburg. A card is made for each certificate and these are printed and bound for each year. This index is made up each month.

RECOMMENDATION.

I would recommend that this department install the card tabulating system. This can be started with two hand punching machines. After the system has been adopted an electric machine can be installed. The hand machines can always be used for either correcting or punching birth cards and marriages. The extra celluloid plates cost $5 each. This department would require two hand punching machines, one gang punch and the punch cards.

Respectfully submitted,
C. A. CARTER.

After consideration of recommendations by Dr. Carter, it was

Ordered: The Secretary may at his discretion purchase one or more punch machines with necessary equipment for the purpose of improving and bettering the tabulation of vital statistics.

Report of inspection of county jail at Princeton, Indiana, March 25, 1912, by John Owens:

The jail is an old brick structure about 40 x 80 feet, two squares northeast of the public square. It occupies a site of about four city lots, facing the south. The sheriff's quarters are in the front of this building and the rear portion of the main structure is used for the cell rooms. This part

of the building is in especially bad condition. The walls are cracked and the cement floor strikes hollow in several places. There are two cells in the south part of the cell room, which are used for female prisoners. The furnishings in these rooms are old, in bad condition, and the bedding is extraordinarily dirty. There is an old dirty bathtub on either floor, one closet arrangement with no privacy, and the furnishings here are even worse than they are in the men's department.

At the present time the jail is overcrowded. Some of the cots are placed in the corridors around the cages. The premises around the jail are in poor condition, especially the rear premises. If the State Board of Health has any jurisdiction here this jail should be condemned, as it is insanitary and probably unsafe.

After consideration of the above report of inspection of the County Jail at Princeton, Indiana, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, The Indiana State Board of Health in regular session April 12, 1912, finds to its satisfaction that the county jail of Gibson County at Princeton, Indiana, is old, dilapidated, insanitary, and threatens the health of the prisoners; therefore it is

Ordered: The jail of Gibson County at Princeton, Indiana, is herewith condemned and shall not be used for jail or prison purposes after April 12, 1913. The secretary shall transmit this proclamation to the County Commissioners of Gibson County and give them all information they may desire to have in regard to the proceedings of the State Board of Health in conjunction with this matter. And it is further ordered that if the said Gibson County jail is used for jail or prison purposes after April 12, 1913, then full evidence and information concerning this matter shall be transmitted to the Attorney-General who will proceed to enforce the statutes as provided.

Ordered: The usual annual health officers' school shall be held May 21st and 22d at Indianapolis, and the Secretary is directed to make all arrangements and to get up a program for the same, and it was further ordered that a special meeting of the State Board of Health for those dates shall be called.

Ordered: The Secretary shall, in the name of the Board, promptly inform district prosecuting attorneys of any infraction of the sanitary schoolhouse law which may be discovered in any way. He shall advise said prosecuting attorneys of all information he may possess and ask them to proceed by proper legal methods to enforce the law. In the event of the refusal or neglect of any district prosecuting attorney to act as herein provided, then the Secretary shall spread full information of the case before the Attorney-General.

Report of inspection of sewer system at Princeton, Indiana, March 25, 1912, by John Owens:

The main sewers of Princeton are, first, a sewer on the north side running from east to west and emptying out into a creek in the western part of town south of the fair ground. This affords sewerage for the residence district mainly on the north side of the square, and which, from the character of the effluent and the remote point of exit, is unobjectionable, at least for the time being. Secondly, a sewer running from the southeastern part of town toward the southwest and emptying into a small stream in the southwestern part of town on the property of the Taylor Manufacturing Company. This sewer takes care of the refuse from the east school building, the court house, the high school building, and in general, the residence portion through which it passes. The effluent is very foul and offensive, and is made the objection of a complaint from the Taylor Manufacturing Company herewith appended. Suits have been instituted by private persons against the city, asking the courts to declare the sewer a nuisance and require the abatement of this manner of sewerage disposal. It seems advisable to the undersigned that this sewer be continued beyond its present outlet and septic tanks introduced into the system, both of which plans I understand are being contemplated by the city of Princeton at the present time.

The above report was received and ordered spread of record.

Report of inspection of water plant at Princeton, Indiana, March 25, 1912, by John Owens:

The water supply of the city of Princeton is taken directly from the Patoka River, about four miles north of town, pouring into a stand-pipe and without filtration or sedimentation or any other method of purification, it is sent directly into the city mains for consumption by the patrons of the water system. The water is very muddy and just above the present pumping station, and on a hill overlooking the river, is located the stables used for housing the horses belonging to the company. Drainage from this hill goes, naturally, into the river and on into the pipe. That the water is impotable is evidenced by reports of analysis made by the water laboratory from Dr. J. W. Roper, a patron of this company at Princeton, Indiana. It seems that the State Board of Health should take some action to prevent the further sale of such adulterated water to citizens of Princeton.

The above report was received and ordered spread of record, and the Secretary directed to make inquiry of the Attorney-General as to whether or not under the Pure Food Law an action could be brought against a water company for furnishing impure or adulterated water and to report his findings at the next meeting of the Board.

Report of inspection of sewer at Danville, by Jay Craven.

Acting on instructions, on January 30, 1912, I visited Danville, Hendricks County, Indiana, and made an investigation of the sewer constructed by the county commissioners in 1905.

The sewer was built for the purpose of caring for the sewage from the court house and the county jail, but no objection was made by the county commissioners to other individuals and corporations tapping the sewer. At the present time there are eighteen connections to the sewer, which has a length of 4,600 feet. When it was built no attempt was made to fix grades so that it could be used as part of a general system in the future.

A sanitary system has been designed for the town, and plans drawn for the same. These plans call for two outlets, independent of the present one. One of the outlets is to empty into the White Lick Creek north of the town and the other below the town. Inasmuch as the water supply of the town is drawn from wells about 260 feet in depth, located near the creek, below the proposed upper outlet, it is advisable so to change the plans that all the sewage will be conveyed to one point below the source of the water supply. The supply is, no doubt, fed to some extent by the creek and any possible sources of contamination should be considered and eliminated.

The proposed changes in the plans necessitate a deep and expensive cut. If the original plans are followed the two proposed outlets will require two treating plants. It is roughly estimated that the first cost and the upkeep of an extra plant would not be far from the cost of the extra excavation necessary.

The question of installing an adequate treating plant to care for the effluent of the present sewer should not be considered. The expense in connection with it, considering the number of people served, would not warrant it. It would be too costly for a temporary relief and the plant could not be used in connection with a general system.

Therefore, it is recommended that the present plant be changed so one outlet will serve the town. Although impossible to construct the whole system at one time, it is recommended that a part of it, sufficient to care for the sewage from the county jail and court house and the remaining services connected to the present sewer, be built at this time. In this way a permanent system and treating plant will be established, which can be added to as conditions warrant and by means of which the whole town will be served.

The above report was ordered received and spread of record.

Ordered: Drs. Tucker and Hurty shall represent the State Board of Health at the National Tuberculosis Association to be held at Washington, May 30th and 31st; and also to represent the State Board at the annual meeting of the American Medical Association to be held at Atlantic City June 4 to 7, 1912, their expenses to be paid from the general appropriation of the Board.

Ordered: Drs. Hicks, Boyers and Hurty shall attend and represent the Indiana State Board of Health at the annual meeting of the American Public Health Association in Washington, D. C., September 18th to 20th; and also to attend and represent the State Board at the 15th International Congress on Hygiene and Demography to be held in Washington September 23 to 28, 1912, their expenses to be paid from the general appropriation of the Board.

Ordered: Mr. H. E. Barnard shall attend and represent the Indiana State Board of Health at the annual meeting of the Association of State and National Food and Dairy Departments, to be held at Seattle, Washington, July 9th to 12th, his expenses to be paid out of the appropriation for enforcing the Pure Food and Drug Law.

SCHOOLHOUSE CONDEMNED.

The petitions upon which action was based in each instance of schoolhouses here condemned were ordered placed on file but not entered into the minutes of the Board.

Report of sanitary survey of public school building at Charlestown, Clark County, Indiana, April, 1912, by Wm. F. King, Assistant Secretary:

History of the Building.—This building, which occupies a square in the center of the business part of Charlestown, was constructed in 1827 as a court house. In 1886 the county seat having been removed from Charlestown to Jeffersonville, the building was changed into a school building and has been used continuously for school purposes since that time.

Site.—Much of the ground surrounding this building is lower than the street. The ground is therefore wet and muddy and not sufficiently drained. Being located in the center of the business part of the town with business streets on all sides, the surroundings are noisy, so that the work of the school must of necessity be interfered with and impaired by reason of its location.

Building.—This is a two-story building of brick construction. The outside walls are strong, firm and apparently as solid as the Rock of Ages. The roof is in good condition. Foundation is solid and good walks lead from the street to the building on three sides.

Interior.—There are two classrooms and two workrooms on the first floor and three classrooms and a recitation room on the second floor. Two stairways lead from the first to the second floor. These stairways are steep, winding and dangerous in case of fire. The corridors leading from the entrance to these stairways is narrow and obstructed. The two classrooms downstairs are each provided with a cloakroom. Both these cloakrooms are not provided with light, and are dirty, foul smelling and insanitary. The classrooms are lighted from two sides; are furnished with old fashioned, nonadjustable desks and seats. Blackboards are in good condition. The floors and walls of the cloakrooms are also in good condition. The building is heated by hot air from a furnace located in a hole under the building. The heating is said to be inefficient so that it was necessary to dismiss some of the rooms at different times the past winter. The ventilation is from the windows with a vent stack leading to the attic from each room. One room on the second floor is overcrowded, the seating capacity of the room being 41, while the actual capacity is but 37.

Basement.—What is used as a basement is really a dark and forbidding hole in the ground under the building. The first floor of the building is but a few inches above the ground level so that it is impossible to light the basement. The stairway leading to the basement is extremely narrow, dark, and extremely dangerous.

Water Supply.—The water supply is from a well located on the school grounds. Common water buckets and common drinking cups are used.

Closets.—Flush closets are located in the so-called basement. The water for flushing is supplied from a cistern pumped from there to a supply tank. These closets are extremely insanitary and a strong odor is noticeable throughout the entire basement. These closets do not flush automatically but are flushed by the janitor according to his statement about four times each day.

General Conditions.—There are three exits from the building and one fire-escape of wooden construction. The playgrounds are not ample. Rest rooms and lunch rooms are not provided. Artificial lights are provided in the basement, but are of no service because no day current is in use.

Conclusions.—This building, having been originally constructed as a court house is not at all suited for school purposes. It is badly lighted, insufficiently ventilated, is extremely dangerous in case of fire, and, the basement being dark and dingy and dangerous, should be condemned on every count. It is therefore recommended that the State Board of Health issue a condemnation order against this building and prohibit its use for school purposes on and after June 1, 1912.

Merely as a matter of suggestion your inspector wishes to make the following statement: This building, constructed as it was 85 years ago, is now one of the oldest buildings to be found in the State of Indiana. There is much of historical interest associated with this old building. It should not be destroyed but should be preserved as a reminder of the pioneer history of the State. The grounds around this building are not suited for a playground or for a schoolhouse site. A modern, sanitary, and efficient school building should be erected in Charlestown, but it should be erected on a new site, especially adapted for school purposes. The old court house building should be preserved as a memorial to be used only for public purposes and the ground surrounding this old building should be beautified in keeping with the historic value of the old building itself.

After consideration of the above survey, the following proclamation of condemnation was passed:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Public School Building at Charlestown, Clark

County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said public school building at Charlestown, Clark County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said school building for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of sanitary survey of the school building in Sellersburg, Clark County, Indiana, April 24, 1912, by Wm. F. King, Assistant Secretary:

Site.—This building occupied a tract of about two city squares fronting on the main street of Sellersburg. This site is well drained, is not in close proximity to any noisome or unhealthful condition and is fairly well adapted for a school site. No walks lead from the street to the schoolhouse and no walks lead from the school building to the outhouses.

Building.—Exterior: The building is of two stories frame construction and of a vintage of at least 50 years ago. The foundation is of stone, but slightly elevated above the ground level. The outside walls are dilapidated, broken in many places with large sections where the weather-boarding has been entirely torn off. The roof is of shingle, old, badly dilapidated, with many leaks, as can be seen on the ceilings of the upper rooms. The building has no spouting whatever.

Interior: There are 4 classrooms, 2 on the first floor and 2 on the second. No cloakrooms are provided. The walls of the halls and corridors being provided with hooks for cloakroom purposes. The stairways are steep and narrow. The corridors are narrow and dingy. Each of the classrooms is lighted from three sides, the seats being so placed that the pupils face the light from the windows directly in front of them, while light also comes in from the rear and from one additional side. The walls and floors of all classrooms are in extremely bad condition, plastering having fallen from the ceiling in large sections and the plastering that still remains being loosened in many places. The walls are dilapidated, dingy, defaced and dirty. The seats and desks are of an extremely old type. Practically every desk and seat in the entire building is defaced by the accumulated cuttings of several generations of penknife artists. In the front room on the first floor it has been found necessary to support the ceiling by the use of a sill placed upon the floor with three iron columns supporting a lintel under the floor above. The blackboards are of an ancient type, siding boards covered with black paint. The rooms are heated by stoves placed near the center of each room, two of the stoves being partly surrounded by jackets, the other two having no protection whatever. Each of the classrooms is lighted from three sides. No provision is made for ventilation excepting by doors and windows. There should be no lack of ventilation, however, from the fact that great cracks are to be found around all the windows and all the doors in addition to the fact that many of the windows have from one to four broken panes of glass. The school was not in session at the time of this inspection so that the actual number of pupils in each room could not be determined.

Basement.—No basement of any kind.

Water Supply.—The water supply is obtained from a well located across the street and a common water bucket and common drinking cup are in use.

Closets.—Outdoor closets, separate for the sexes. The girls' closet is filthy, insanitary and odorous. The boys' closet is beyond description. It is filthy, indecent, immoral; no urinal is provided, and no seat, merely an open vault surrounded by boards and filled to overflowing with a reeking, odorous mass. A photograph of this closet should be obtained and preserved in the archives of the State as the last remaining connecting link between the dark ages and modern civilization. Neither of the closets are screened and neither have walks leading to them.

General Conditions.—The exits from the building are narrow, obstructed and dangerous in case of fire. No fire-escapes are provided. No towels, no washbasins, no plumbing, no rest room, no lunch room, no artificial lights and apparently no janitor.

Conclusions and Recommendations.—There is but one conclusion in regard to this building. It is extremely insanitary, dangerous from the standpoint of fire, wind storms, and from collapse on account of age, decay and senility. It is therefore recommended that this building be condemned as being totally unfit for school use or for any other use whatever as a building. This condemnation should be in force and effect immediately.

After consideration of the above sanitary survey, the following Proclamation of Condemnation was passed:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the school building in Sellersburg, Clark County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said school building in Sellersburg, Clark County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said school building for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of inspection of District No. 5, Harrison Township, Clay County, Indiana, April 1, 1912, by John Owens:

The site of this building is high, has good natural drainage, has a good gravel road directly in front and seems to be suitable as a building site.

The water is supplied by a deep driven well and seems to be satisfactory. The closets are insanitary, without shields, are much dilapidated and wholly unsuitable for use.

The building itself is oblong, frame box, sits north and south, with three windows on either side and two in the rear. It is propped up off of the ground by blocks of limestone and has no other foundation. The weather boarding is broken off in large patches, the shingle roof leaks, the floors are not secure, the plastering is old, cracked and is falling off, is very black and unsightly. The wood work is old and much scarred. The seats are the old fasihoned nonadjustable type, double in many instances, much scarred and roughened, and in general unsuitable as a place for holding school

No ventilation is provided for except what leaks in through cracks around windows and doors. The stove is the old vertical cast iron type, rusty and unkept and without any heat shield. Cross lights are apparent everywhere in the building and the blackboard is in part located between the windows, and every patron in the district signed the petition asking for an inspection of the premises.

The president, Mr. William M. Collins, Clay City, Indiana, is in favor of a new building, but so far the advisory board has blocked his attempts to build it.

It is respectfully recommended that this building be condemned.

After consideration of the above sanitary survey, the following proclamation of condemnation was passed:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse, District No. 5, Harrison Township, Clay County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, District No. 5, Harrison Township, Clay County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Third Ward Schoolhouse, Frankfort, Indiana, by J. N. Hurty:

Site.—The site is very small, the building covering over one half of it. It is sufficient so far as drainage is concerned but is within about 300 feet of a railroad. It is, therefore, unfit for school purposes, and contrary to law.

Building.—Brick, stone foundation. Built in 1886. Mansard with slate roof. Has had an addition built to it. There is a cellar under the entire building. This cellar cannot be called a basement. The ceiling is

7 feet high. The floor is mud and is very damp. At three places in the cellar mud holes had existed as was plain from the appearance of the floor. It was plain also how the water got into the cellar by draining through ordinary cellar windows and also seepage from the floor beneath. The building was formerly heated and ventilated by the Smead system, but was done away with several years ago. At the present time it is warmed by direct hot water radiation from the municipal heating station. The ventilating ducts from the old Smead system still remain and work tolerably well. However, the said ducts are not large enough to thoroughly ventilate the rooms and the floors are old and patched in many places. The roof leaks, as is evidenced by the damp places at various points on ceilings and at one or two places the plaster has fallen off. The down spouts and drainage are in only tolerable condition.

Interior.—There are eight rooms with large, sufficiently lighted, interior halls on two floors. Cloakrooms, well lighted and warm, are provided for every schoolroom. The rooms are of the same size and lighted in the same way.

Toilets.—The toilets are flush closets and in good condition and working well. These are objectionable, however, because of the approach. The boys' closet is entered by a very narrow passage which bends at right angles. The girls' toilet is entered by a straight but very narrow passage. These toilets are passable from the sanitary standpoint.

Water Supply.—Water is taken from the public water works and bubble fountains are used. The public supply is pure and satisfactory.

Room No. 1.—Twenty-nine feet 8 inches by 29 feet 6 inches by 13 feet. Forty-eight pupils enrolled. Seats of one size. Room not crowded. Light is sufficient and introduced from rear and right. No shades. During the zero weather the temperature in this room got as low as 60 degrees Fahrenheit.

Room No. 2. Same size as No. 1. Enrollment 26. Light sufficient but introduced from rear and left. Desks of same size. No shades. The highest temperature at zero weather was 60 degrees.

Room No. 3.—Dimensions same as No. 1. Forty-one pupils enrolled. Seats of same size. Light sufficient. Introduced from two sides, namely left and rear. During zero weather temperature fell as low as 58 degrees. No shades.

Room No. 4.—Same dimension as No. 1. Forty-one pupils enrolled. Light sufficient but from two sides. Temperature average 67 in zero weather. No shades.

SECOND STORY.

Stairways.—Two stairways lead from the first to second floor. They are 4 feet wide and both have three turns in them. This constitutes a menace to life in case of fire, for they are not of sufficient width and breadth to enable pupils to escape.

Room No. 5. Same dimensions as No. 1. Light sufficient. Introduced from left and rear. Enrollment forty-four. Average temperature 65 at zero. No shades.

Room No. 6. Same dimensions as No. 1. Light sufficient. Introduced from left and rear. Thirty-two pupils enrolled. No shades.

Room No. 7. Same dimensions as No. 1. Light sufficient. Introduced from left and rear. No shades. Fifty-six pupils enrolled. Temperature average 58 to 62 in zero weather.

Room No. 8. Same dimensions as No. 1. Light sufficient and introduced from left and rear. Fifty-seven pupils enrolled, but never all present at one time because classes recite in adjoining rooms.

Opinion and Recommendations.—This schoolhouse is insanitary in that it is not evenly and properly warmed, is improperly lighted, not sufficiently ventilated and the stairways being narrow and winding they constitute a menace to human life. I recommend that the schoolhouse be condemned and that it shall not be used for school purposes after June 15, 1912.

After consideration of the above sanitary survey, the following proclamation of condemnation was passed:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Third Ward schoolhouse at Frankfort, Clinton County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as the Third Ward schoolhouse at Franfort, Clinton County, Indiana, is condemned, and shall not be used for school purposes after July 1, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of inspection of main school building, Garrett, Indiana, made March 25, 1912, by W. F. King:

Site.—This building is located in the central part of the city of Garrett on the same school lot with the new high school building. This school lot is well drained, has abundant shade, with good walks leading from the street to the main building and from the main building to the new high school building. The site is in every way desirable for school purposes.

Building.—The building is two-story, of brick construction, with eight rooms. This building was constructed in 1876. The walls and foundation of the building are in good condition. The building is heated by steam with a fan system of ventilation, both the steam heat and ventilation having been installed within the past few years. The heating and ventilation are both partially good. Class rooms are lighted from two sides but the amount of light is sufficient.

Water Supply.—Water is obtained from the city supply and sanitary drinking fountains have been installed.

Toilets.—The toilets are in the basement and connected with the city's sanitary sewage system and are provided with continuous flush.

Interior of Building.—The walls of class rooms are not in good condition, being more or less soiled with plastering loose in a number of places. The floors both in class rooms and corridors are badly worn and extremely insanitary. The class rooms are not overcrowded, there being sufficient air space for the seating capacity in each room, due to the fact that the rooms have 15 and 16 foot ceilings The desks and seats are stationary and of a type long since discarded in most school buildings. No fire-escapes are provided. The location of the furnace directly beneath the stairways, together with the narrow winding stairways leading from the first to the second floor, render this building one of great danger in case of fire.

Recommendation.—It is therefore recommended that this building be condemned as insanitary and inefficient by the State Board of Health, said condemnation to be in force and effect on and after the close of the present school year.

After consideration of the above sanitary survey, the following proclamation of condemnation was passed:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Main school building, Garrett, Dekalb County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said main school building at Garrett, Dekalb County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of inspection of high school building, Muncie, Indiana, made March 25, 1912, by W. F. King:

This is a three-story and basement building of brick construction, and is in good condition so far as the building itself is concerned. This building was inspected April 29, 1910, in response to a petition filed with the State Board of Health by a number of patrons of the school. The record does not show who inspected the building at that time, and the building was condemned by the State Board of Health May 24, 1910. Following this condemnation, a fan system of ventilation was installed with ducts leading to each room for conveying fresh air to the rooms, and with vent ducts leading from the rooms for conveying foul air to the outside of the building. Following this action on the part of the Muncie school board, the condemnation order passed by the State Board of Health was extended. The present inspection was made in response to a request from Dr. Hugh A. Cowing, county health commissioner. At the time of the inspection Dr. Cowing, two members of the school board and the superintendent of schools were present.

The system of ventilation in the building seems to be adequate. The sanitary surroundings are good. The water supply and toilet arrangements are satisfactory. The light is sufficient in all rooms, but does not comply with the law in that the rooms are lighted from two sides. There are 579 pupils in attendance, 158 of these being from the country.

The chief fault to be found in this building is that a number of the rooms are overcrowded. Room No. 13, a study room on the first floor, has one hundred pupils, while the capacity of the room is but 66. A study room on the second floor is also overcrowded with 48 more pupils in attendance than the capacity of the room will allow. Four rooms are used in the basement for class purposes and there are four recitation rooms on the third floor. The building, therefore, is badly overcrowded and the city of Muncie should provide larger facilities for its high school work. It is therefore recommended that this building be condemned by the State Board of Health as totally inadequate to meet the needs of the city of Muncie for a high school building and that this condemnation be made to take effect immediately following the close of the present school year.

After consideration of the above sanitary survey, the following proclamation of condemnation was passed:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the high school building at Muncie, Delaware County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said high school building at Muncie, Delaware County, Indiana, is condemned, and shall not be used for school purposes after July 1, 1912, and if any township trustee, or city, or town school trustees or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of inspection of Districts Nos. One, Two, Three and Four, Waterloo Township, Fayette County, March 27, 1912, by John Owens:

These buildings are all identical in construction. The school grounds are all the same size and the conditions are so nearly the same that they are here described together.

The site in each instance is about 100 feet by 100 feet, low and marshy with nothing but natural drainage and unsuitable for use as school sites. The buildings in every instance are the old fashioned wooden box buildings, four windows on either side, permitting cross-lights everywhere in the room. In every instance these buildings have shingle roofs, are propped up off the ground, leaving considerable open space. The weatherboarding is coming off in many places, the plastering is cracked and is smoky and dirty. The floors are generally bad and the whole building, outside and inside, has a generally unkept appearance.

The relation between the window area and the floor space is in round numbers from one to ten and each pupil has not less than 6 feet of air space. No ventilating system is provided for in any instance, but air in abundance gets in through the cracks around the doors and windows. The buildings are heated with old-fashioned cast iron stoves without shields, and the teachers complain that the rooms are cold during the winter. The closets are in bad condition, and, with one or two exceptions, are without screens. In no instance is there a walk leading into the building or from the building to the closets in the rear.

The Water.—In no instance is there suitable water furnished on the school premises for the school children. In every instance wells have been sunk, but the water is foul smelling or tasting, and in most of these schools the wells have been abandoned entirely and the water obtained from some other source.

The trustee wishes to abandon all of these districts, build a sufficiently large building near the center of the district to care for all the pupils, and transport the pupils from the outlying districts to this central school. I examined the site above which he proposed for the new building, and aside from the fact that it is centrally located, it is high, has good natural drainage and seems to be quite well suited for a building site. The only objection that I can determine is the fact that it has no trees.

It is respectfully recommended that these four buildings and their building sites be condemned.

Mr. Simpson is the trustee.

After consideration of the above sanitary survey, the schoolhouses in Districts Nos. One, Two, Three and Four, Waterloo Township, Fayette County, were condemned and the following proclamations of condemnation were adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse known as District No. 1, Waterloo Township, Fayette County, Indiana is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as District No. 1, Waterloo Township, Fayette County, Indiana is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse known as District No. 2, Waterloo Township, Fayette County, Indiana is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as District No. 2, Waterloo Township, Fayette County, Indiana is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Whites, known as District No. 3, Waterloo Township, Fayette County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse at Whites, known as District No. 3, Waterloo Township, Fayette County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Hoovers, known as District No. 4, Waterloo Township, Fayette County, Indiana is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse at Hoovers, known as District No. 4, Waterloo Township, Fayette County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of inspection of schoolhouse at Switz City, Greene County, Indiana, February 23, 1912, by John Owens:

Site.—North part of town, low, flat, sloping slightly north. Very muddy and poorly drained.

Building.—Joint township school, brick building, two story, facing east, on west side of road. Two rooms originally, others added in rear, very old; walls cracking on west side about windows. Heated by hot air furnace, very poor, equilibrium of system easily disturbed by draughts and no foul air ducts. Air comes up through basement filled with coal dust and ashes. Building has shingled roof and is T shaped. Ventilation at windows, baffle boards and foul air ducts.

Primary Room.—Occupies lower part of T, east side building, first story. Size 38x26x12, 200 cubic feet air space for fifty-nine pupils. Light ratio 1 to 25. Cross-lights everywhere. Wainscoting broken and warped off in places. Stove used in this room in addition to furnace. Thermometer 75°, air bad. Pupils face east, windows in north and south.

Second Room.—Grades 3, 4 and 5. Room south half of upper part of T. Fifty pupils face east, light on south and west. Thermometer 78°, air bad. Ratio of light to floor area 1 to 15—50 square feet light. Each pupil has 200 cubic feet air space. Many loose seats, and cross-lights in all parts of the room.

Third Room.—Grades, 6, 7 and 8. Room occupies north half of upper part of T. Fifty pupils face east, light on north and west; room cold, air very bad. Ratio of light area to floor area 1 to 15—50 square feet of light. Each pupil has 200 cubic feet air space. Many loose seats and improperly placed. Cross-lights in all parts of room.

High School Room.—Directly above the primary room, reached by old sagging stairs; 45 pupils. Dimensions 38x26x12. Relation of light to floor space 1 to 25. Each pupil has 203 cubic feet air space. Cross-lights everywhere.

An inspection of pupils in this building revealed many with weak, watery eyes, and much complaint on the part of pupils as to eye strain.

The building is owned jointly by two townships, and there is a strong feeling that a new building on a new site is needed, and that there is no reason why it should not be provided by another year.

I recommend that both the building and site be condemned, to take effect at the close of the present term of school, if not sooner.

Outhouses.—Both are unsanitary and the boys' is an "abomination unto the Lord."

County Superintendent is Prof. Daniel McIntosh, Worthington, Indiana.

After consideration of the above sanitary survey, the schoolhouse at Switz City, Greene County, Indiana, was condemned and the following proclamation of condemnation was ordered:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Switz City, Greene County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes, Orders: That said schoolhouse at Switz City, Greene County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

In the matter of petition for inspection of school buildings Nos. 6 and 9 in Richland Township, Greene County, Indiana:

These buildings were inspected by Dr. W. R. Cravens, county health commissioner of Greene County, and report of said inspections was made to the State Board of Health. On account of this report not conforming to the outline for such inspections in use by the State Board of Health the reports were returned to Dr. Cravens with instructions to have them conform to the outline in use by the State Board of Health. Dr. Cravens has not as yet submitted a corrected report. In his original report he recommended that the State Board of Health condemn both buildings.

Mr. I. F. Stalcup, trustee of Richland Township, called this morning and stated that a meeting recently held of the patrons of these two schools with the township advisory board, the county superintendent, the county health commissioner and himself, the county health commissioner informed the advisory board and patrons that both buildings would be condemned.. The trustee states that the advisory board is ready to construct new buildings, the patrons of the two schools are in favor of new buildings, and that he, as trustee, desires to begin the work of construction at the earliest possible date. He further states that he has called a meeting of his advisory board for tomorrow (April 13) for the purpose of taking formal action upon the order of the State Board of Health in this matter. It was agreed with Mr. Stalcup that these facts should be presented to the State Board of Health at its meeting today and that the State Board should be requested to issue a formal order of condemnation against these buildings, based upon the facts herein stated.

After consideration of the above report, schoolhouses Nos. 6 and 9 in Richland Township, Greene County, were condemned. and the following proclamations of condemnation adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse, District No. 6, Richland Township, Greene County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, District No. 6, Richland Township, Greene County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse, District No. 9, in Richland Township, Greene County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, District No. 9, in Richland Township, Greene County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary Survey of Cowden School Building, in Brandywine Township, Hancock County, Indiana, February 26, 1912, by Mr. W. F. King, Assistant Secretary:

Site.—The site occupied by this building is lower than the road to the east and the adjoining land to the north, so that surface drainage from two sides of the school grounds runs on and across the grounds. The schoolhouse occupies a little island in the center of the grounds, practically surrounded by mud and water. No walks lead from the road to the schoolhouse, nor from the schoolhouse to the outhouses, so that in wet weather it is impossible to reach the school building without wading through mud and water.

Building.—The building is without foundation above the ground. Water stands under practically the entire building, so that as one of the pupils suggested, "You can put your fingers through the holes in the floor, and paddle in the water." The building is of frame construction, one story, and built more than 40 years ago. The building is badly dilapidated, much of the weather-boarding being off. The roof is old and dilapidated with no spouting whatever.

The schoolroom is 26x30 feet in dimension. No cloakroom. Four windows on each side, causing it to be improperly lighted. No provision whatever is made for ventilation aside from the windows. At the time of the inspection there were twenty-three pupils in the room, which is the average attendance. The room is heated by a stove with an iron jacket extending half around the stove. The seats and desks are of wood throughout, of an extremely old type, broken in many cases and in many cases defaced by obscene figures cut in the desks. The floor is unclean and filthy in the extreme because of long continued use, and cannot in its present condition be made clean or kept clean.

Water Supply.—The water supply is from a driven well on the school ground with one common drinking cup in use.

Outhouses.—The outhouses are common shacks built over surface vaults and are indecent and filthy beyond description, especially the outhouse for the boys. This outhouse is indescribably bad and is so filthy that no boy could enter the outhouse and maintain any degree of self-respect. No screens are provided for the outhouses and no walks lead to them.

The blackboard is of a type rarely seen, consisting of ordinary ceiling boards painted black.

In conclusion it must be said that this school building in every particular is insanitary to an extreme degree, and is totally unfit for school use. This building cannot in any way be repaired or remodeled and made to comply with sanitary schoolhouse requirements. It is therefore recommended that the State Board of Health issue a condemnation order prohibiting the further use of this building for school purposes, this order to be in effect immediately after the close of the present school year.

In regard to four other schoolhouses in this township (Brandywine), it is stated by the county superintendent, Mr. George J. Richman, by the teacher at the Cowden school, and by Mr. Larrabee, former county superintendent, all present or former residents of Brandywine Township, that of the five buildings in question, the Cowden school building is by far the best of the five. This being true, it is evident that all five of these buildings should be condemned as unfit for school use, and as being injurious to child life and health. It is therefore recommended that a similar condemnation order be issued against the other four school buildings now in use in Brandywine Township, outside of Carrollton.

After consideration of the above report, the Cowden School Building in Hancock County was condemned and the following proclamation of condemnation was passed:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Cowden School Building, in Brandywine Township, Hancock County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as the Cowden School Building, in Brandywine Township, Hancock County, Indiana, is condemned and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said school building for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of inspection of district No. 3, Stilesville, Franklin Township, Hendricks County, Indiana, April 3, 1912, by John Owens:

This building was inspected by G. R. Coffin January 14, 1907, and condemned by the State Board of Health in 1908, was allowed to be reopened after certain minor changes, which had been made by Dr. Hoadley, County Health Commissioner of Hendricks County, and has been running in that condition since.

The inspection revealed the following conditions:

Site.—The school is located in the central part of town. The plat contains four town lots. It is fairly well drained. The yard is of grass and dirt. There is a driven well on the premises. A number of trees afford an abundance of shade. Approaches of brick walks lead to the building. There are no walks to the outhouses. The outhouses are new, in fairly good condition, surrounded by proper shields and are the most satisfactory on the premises.

Building.—The building is a two-story brick, four rooms and two hall ways, one above and one below. Has a stone foundation and a slate roof. The walls in various places have many missing bricks. The keystone over the exit in the east wall is loose and the wall is badly cracked. The west wall is cracked from top to bottom in two places. The north wall is in better condition. The condition of the walls render the building dangerous and unsafe for occupancy. The down spouts are practically gone and the walls are water soaked. The rooms are badly smoked and the floors are rough and dirty.

Heating.—The various rooms are heated by a large stove.

Ventilation. There is no means of ventilation except by the windows and doors.

Hallways.—The hallways are 11x22 feet on each floor. They are used as cloakrooms. The winding stairway is four feet wide and leads from the lower to the upper hall. It is located in the north end of the halls.

The Primary Room.—This room is located in the south end of the building. It is 24x26 feet in area, is lighted on two sides and cross-lights appear everywhere. The lighting in this room is not sufficient to meet the present requirements, being only about one-fifteenth of the floor space.

The Intermediate Room.—This room is located in the north end of the building on the lower floor. The lighting and the general unsanitary conditions are practically the same as they are in the primary room. Much eye-strain is apparent here. On the day of inspection no school was being held in this room.

Seventh and Eighth Grade Room.—This room is located on the upper floor in the south end of the building. It is about 26 x 24 feet in area. The light comes in from two sides and then is insufficient. The general unsanitary conditions noted apply to this room also.

The High School Room.—This room is located on the upper floor, just north of the seventh and eighth grade room, separated by a wooden partition. Is 14x26 feet in area. It is lighted by windows on three sides, the pupils facing one of these sides. Much eye-strain is in evidence in this room. Condemnation should be re-entered against this building.

The present trustee, Mr. Tillman Ruark, is already planning for a new building, but it will probably facilitate matters to have the building recondemned. The advisory board has appropriated something like $20,000 for the construction of a new building but they are having difficulty as to the selection of a proper site. I examined possible sites with the trustee and other citizens.

The first one of these sites is the one now occupied by the old building. It is wholly unsuitable in that it is not sufficiently well drained and is not sufficiently large. This site should be condemned.

The second site inspected is on the road east of the cemetery, north east of the town, about one-fourth of a mile. This site is rolling, generally high, except for a drain that comes down through the middle part of it. It is sandy and without any shade whatever. This site is fairly good but not the best one inspected.

The third site inspected is one lying north of the middle part of town in a large meadow. It is lower than part of the town to the south of it and receives all of the drainage from that part, including that from back yards, livery barns, a hog lot, etc. The site is entirely too low with respect to the town and should not be considered.

The fourth site inspected lies three squares south of site number three and is objectionable for the reason that it receives the drainage from the south part of town. There are a number of old buildings on this site and it would not afford suitable playground facilities. It is also doubted very much whether proper location with respect to the street can be found for the building itself.

The fifth site is to the north of main street on the west side of town. It is cluttered with old buildings, straw heaps, barn yard refuse and is not suitable for school purposes.

The sixth site inspected is in the west part of town on the south side of the public road and is by all means the most desirable location, in fact the only real location inspected. It comprises something like three acres, is high, well drained, has some magnificent old maples and is almost an ideal building site. It would be necessary, however, to condemn it, as the present owner will not sell under present circumstances.

After consideration of the above sanitary survey, the schoolhouse at Stilesville, District No. 3, Hendricks County, Indiana, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Stilesville, District No. 3, Franklin Township, Hendricks County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes.

Orders: That said schoolhouse at Stilesville, District No. 3, Franklin Township, Hendricks County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of investigations as to school conditions in Reno school, Clay Township, Hendricks County, Indiana, April 3, 1912, by John Owens:

This building is located at Reno, Hendricks County. The site is about one acre in extent and is fairly high and well drained but there are large holes of considerable extent in the ground, which allow collection of water. The well is a deep driven well, and so far as I can determine the water is satisfactory. There is no proper approach to the building and no walks to the closets in the rear. These closets are unsanitary, and wholly unsuitable for use without screens. The old building is an old two-story brick building, walls showing cracks in many places on the outside as well as inside, and the building is tied together with iron bolts from side to side and from front to rear. These bolts were put in the building a few years after it was constructed when it began to show evidence of falling down. The walls are much out of line and the trustee reports that during a high wind the exposed walls may be seen to move. This building is 40 x 30 feet and a corridor in the front cuts the length of the school room down to 30 feet.

The upper room in this building has been abandoned for several years. It is full of junk, and dirt, and the corridor is in the same condition.

The lower room, which is the one now occupied for school purposes, is 30 x 30 feet, sits east and west and the pupils face the east, and there are window-panes on the north, the south and the west. The walls in the room are in bad condition, plastering is cracked and falling off. There is no proper method of ventilation and upon the day of inspection the atmosphere was very bad in the room.

The heating is by a stove set near the middle of the room without any kind of shield, and the teacher reports that during the cold weather she had difficulty in keeping the pupils in the remote parts of the room warm. The light area is sufficient in this room and the number of cubic feet per pupil is adequate, but cross-lights prevail everywhere and there is much eye-strain.

It is recommended that this building be condemned as unsanitary and probably unsafe as a building for holding school.

After consideration of the above sanitary survey, the Reno school, Clay Township, Hendricks County, Indiana, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse known as the Reno School, Clay Township, Hendricks County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as the Reno School, Clay Township, Hendricks County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date. he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Millville schoolhouse, District No. 7, in Liberty Township, Henry County, April 6, 1912, by Dr. D. S. Wiggins:

Site.—High, dry and well drained.

Walks.—Good cement walk from street to building, no walk to closet.

Building.—Brick. Very ordinary. One story. Condition of walls.—Unsafe. The mortar becoming crumbly or rotten allowing bricks to loosen. Walls swagged, necessitating artificial support. Loose brick apparent on ceiling of one room, having fallen inward from wall. The north gable wall being 1½ inches out of plumb outward. The south wall being pushed inwards.

Roof.—Shows leaky condition—apparent on plaster in rooms.

Foundation.—12-inch stone, corners, some stone missing.

Spouting.—Has mostly rusted and fallen off.

Building Interior. Number of rooms, two. Cloakrooms two, unheated. Doors open inwardly. Dimensions of rooms, twenty-eight feet square. Windows on three sides of each room, size, about 30 inches by 60 inches. Floors, rough, slivered, somewhat swagged. Walls, dingy, cracked in numerous places. Seats and desks been used about 20 years; none adjustable. Blackboards, fair. Out of shape somewhat, due to condition of walls and plastering. Heating, by common stove, one room, other room by American heater. Some trouble experienced in room heated by stove to keep children warm. Lighting by windows from three sides. Ventilation by windows.

Pupils.—Thirty-three in each room. Average attendance, primary room 27; upper room, 28.

Water Supply.—Dug well, 40 feet deep. No sewer connections. Common drinking cups.

Closets.—Two for sexes. Enclosed. Cleanliness fair. Cleaned each three months.

General Conditions.—Common towel and basin furnished for each room. Floors oiled once yearly. Janitor work done by pupils.

Conclusion.—The house has been built twenty-two years. No high school facilities in township. Building in bad state of repair. Unsanitary.

Township has two million dollars assessable real estate. Taking everything into consideration I would advise this building be condemned for school purposes.

After consideration of the above sanitary survey, the Millville schoolhouse, District No. 7, Liberty Township, Henry County, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Millville, District No. 7, in Liberty Township, Henry County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse at Millville, District No. 7, in Liberty Township, Henry County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted, as provided in law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of No. 4 school, known as Devon, in Liberty Township, Henry County, by D. S. Wiggins, County Health Company.

Site.—Fair, one-quarter acre.

Building.—One-story frame, 40 years old, dilapidated. Roof fair. No spouting. Door cracked. See through it in numerous places. Sills rotten. Floor swagged and uneven. Walls cracked. Windows, three in each side. Loose in frames. Lights 8 x 10 inches. Heated by stove, ventilation by windows. Seats and desks, double desks of ancient pattern. Well. No water at school. Carry one-fourth mile. Common drinking vessel and cup.

Closet.—One. No separation of sexes, but enclosed. Pupils number 23, average, 19.

Conclusion.—This house 40 years old. Frame in bad state of repair. This building not conforming to the requirements of the sanitary schoolhouse law, I therefore recommend this building be condemned for school purposes.

After consideration of the above sanitary survey, the Devon School, District No. 4, Liberty Township, Henry County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse known as the Devon School, District

No. 4, in Liberty Township, Henry County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as the Devon School, District No. 4, in Liberty Township, Henry County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

An person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Chicago School Building No. 6, in Liberty Township, Henry County, by Dr. D. S. Wiggins:

Site.—Wet, an attempt to drain having been made. Water stands under building a great part of year.

Building.—Brick, 28 x 30. Number of rooms, one. Cloakrooms, none. Windows, two sides. Floors, fair. Plastering, very bad. Walls damp, due to bad location. Windows. 30 x 60, no catches or locks. Seats, fair. Not adjustable. Heating, American heater in bad repair. Pupils had trouble keeping warm this winter. Pupils, number 30. Average, 23.

Water Supply.—Dug well, water muddy and not used, especially during high waters, when the water backs up in well from creek. Common drinking cups.

Closets, separate for sexes.

Conclusion.—This building has been built approximately 25 years. Building and site unsanitary. I therefore condemn both site and building for school purposes.

After consideration of the above report, the Chicago School building, No. 6, in Liberty Township, Henry County, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse known as the Chicago School Building, District No. 6, in Liberty Township, Henry County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as the Chicago School Building, District No. 6, in Liberty Township, Henry County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of the Bowers School Building No. 7, Nineveh Township, Johnson County, by Dr. Oran Province:

Site.—The house is located in a rather low, wet undrained place. The ground in the yard is low, running diagonally from one corner to the other. The building is situated on one of the slight elevations in one corner of the yard. There is a gravel walk from front door to the road and well.

Building—Exterior. The building is a low one-story brick, the walls of which are in very fair condition—two small cracks of no great importance are to be found under one window. The building walls are perfectly safe. It is covered with a good shingle room. There are no drains or down-spouts on building.

Interior.—The house has one room 19 feet 7 inches by 35 feet. No cloakroom, hall or stairway. The windows are old and loose in the casings, the door is old and fits very poorly. The floors are old, uneven and in bad condition. The blackboards are in need of a coat of black. The desks are old and somewhat dilapidated. There are four windows on either side of the building. The house is heated by a new furnace stove located in one corner of the room having a fresh air duct leading to it from the outside of building. The lighting and ventilation is as good as it is in any of the single-roomed schoolhouses. That, of course, is not efficient. There are about 32 pupils attending the school at present, which is, of course, more than should be in such a sized room. There was no school on day of inspection, so do not know condition of the pupils. There is no basement.

Water Supply.—The water supply comes from a well in front yard. This well has an iron pump in it and a single tin cup for pupils to drink out of it. No cooler, bucket, etc.

Closets.—The two closets are old dilapidated frame buildings sitting on top of ground with no vault, they are in bad condition. No screens or anything about them that would signify cleanliness. The walks to the closets are simply mud with a little touch of gravel here and there. The general conditions of the closets are bad.

General Conditions.—There are no towels, washbasins or plumbing. The playgrounds are uneven, with small pools of water standing here and there. The floors are oiled and dry swept.

Conclusions.—This building is of about the ordinary type and state of repair of most of the one-room schoolhouses. If it had new window casings and windows, also a new door and new floor it would be in as good condition as the ordinary country schoolhouses. However, you will note that it is too small for the number of pupils. Again, the desks are old and uneven. There is a good modern township high school building within three miles of said schoolhouse, but the patrons prefer a new building to being hauled to the high school.

After consideration of the above sanitary survey, the Bowers School Building, No. 7, in Nineveh Township, Johnson County, Indiana, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Bowers School Building, District No. 7, Nineveh Township, Johnson County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as the Bowers School Building, District 7, Nineveh Township, Johnson County, Indiana, is condemned. and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of inspection of school building in Freelandville, Widner Township, Knox County, Indiana, April 12, 1912, by John Owens:

Site.—Fairly high, reasonably well drained naturally—some shade—about one and one-half acres in extent.

Building.—Brick, two stories, T shaped, slate roof and eight rooms. The building faces south. The hallways are wide but the stairways are narrow. Steam heat is used, the furnace being placed in a hole in the ground, directly under the stairs, and there is no working system of ventilation. Some of the heat radiators are "dead," others fail to work properly, and the radiation is so placed that some of the rooms are overheated. while in others the pupils freeze. The foul air ducts are apparently not of the right sizes to take the air out at the proper rate and the teachers find it "necessary" (?) to close them with curtains or the like to keep the rooms warm enough to remain in during very cold weather. The fresh air intakes for the outside are blocked up so that no air may enter.

The Primary Room.—This room is located in the southwest corner of the building. first floor. Has windows on the south and west, cross-lights prevailing everywhere. The blackboards are in part between the windows, and eye-strain is very severe. Ratio between window area and floor area is about 1 to 10. There is no ventilation and the air is very bad. Thirty-five pupils are here exposed to these harmful conditions. Room is 30 feet by 30 feet with a 12-foot ceiling.

Third and Fourth Grade Room.—This room is located in the southeast corner of the building. first floor. and the conditions obtain here. as to light, ventilation, eye-strain. bad seats. uneven floors, and the like as in the primary room. It is 30 feet by 30 feet with a 12-foot ceiling.

Second and Third Grade Room.—This room is located north of these two rooms and occupies the top of the T. It is 30 feet by 40 feet with a 12-foot ceiling. Light comes in on three sides and cross-lights are. therefore, everywhere. Blackboards are between windows. No ventilation and very poor heating arrangements. Seats are old and much scarred. Floors are uneven in places. Thirty primary pupils are exposed to these insanitary conditions in the primary room.

The Second Floor.—This floor is a duplicate of the first, except that the south end of the upper corner is partitioned off into a little cubby hole used for a recitation room, and a similar space on the south side of the high school room, east of the corridor, is set apart for another very much cramped recitation room.

Corridors and Cloakrooms.—The corridors and cloakrooms above and below are without heat or ventilation.

Closets.—The closets are of brick, in fairly good condition but without shields or walks. The new building should provide indoor closets.

The building and closets should be condemned.

After consideration of the above sanitary survey, the school building in Freelandsville, Widner Township, Knox County, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse, District, No. 7, Widner Township, Knox County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, District No. 7, Widner Township, Knox County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees or teacher, authorizes or uses said schoolhouse for school purposese after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of schoolhouse in District No. 3, Pipe Creek Township, Madison County, Indiana, by Dr. W. Peck:

Site.—The school lot is 9 rods by 9 rods. Pikes on south and west, which are graded higher than lot by 12 to 15 inches. Divide north about 5 rods which extends along all of north side of lot and bears to south and east side, making school lot low and water stands and soaks away. No ditch drainage at all. Water naturally runs to east and south along side ditch to outlet 15 to 20 rods east, where ditch crosses pike.

Well.—Is an old, dry well and driven on down to limestone. Is not filled in about pipe. Waster water pools about on surface or falls back into well around driven pipe. Situated in southwest corner of school lot 9 feet south and 10 feet west of the southwest corner of the building.

Building.—One-story brick with slate roof, 36 feet long, 30 feet wide, 14 feet to square and one-third pitch roof. Faces south. Door, 2 feet 8 inches by 6 feet 8 inches, in about center of south end—the only exit. Opens inside. South end floor on level with ground and varying to about 12 or 15 inches above surface north. Three vents on east and 3 vents on west 2½ inches by 9 inches. Roof in bad state of repair—leaks badly. The walls are cracked and brick crumbling and quite a number of loose bricks here and there. Windows on west and windows on east sides. Size 28 inches by 6½ feet.

Inside.—Dimensions 34x29x12. Walls and plastering in bad state. Ceiling shows evidence of leaks all over. Has not apparently been tinted for ages. North wall pulling away from ceiling joists. No cloakrooms. Hooks around wall for garments. Stove in center of room. No fenders. Floor in just fair condition. Loose and creeky in some parts. Blackboards, slate and teacher's desk in south end of room next to door. Make-believe window shades of slat variety hanging at windows. Seating capacity for 52 seats facing the south and common stationary desks with folding seat, and old.

From the teacher I learned that the enrollment was 40 for term just past and 55 for term before. The 55 is overcrowding and the 40 is very near.

I recommend the schoolhouse be condemned.

After consideration of the above sanitary survey, the schoolhouse in District No. 3, Pipe Creek Township, Madison County, is condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse in District No. 3, Pipe Creek Township, Madison County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse in District No. 3, Pipe Creek Township, Madison County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of schoolhouse at Ingalls, Madison County, Indiana, made February 29, 1912, by J. N. Hurty:

Site.—About one acre. Low in places but can be easily filled and drained. This site is satisfactory because it can be very easily made to comply with all the requirements of the law.

Building.—Is of brick, built in 1894. Its general plan is bad. The walls are cracked. Has a slate roof, which is certainly very poor because it leaks badly. That it does leak is evident from the condition of the ceilings of the upper room. There is no basement, the building being constructed flat on the ground with a stone foundation. There are four rooms in all, three only in use. All rooms are heated by ventilating heaters. The front stairs are winding and steep and the back stairs are steep but straight. Cloakrooms are not warmed but are lighted and can be ventilated by windows. In the new part of the building, which is an addition to the old part, the hall is used for a cloakroom.

Interior of Building.—Intermediate Room. This room is up stairs. Light is from two sides and has six windows. The light is ample. Floor is old. Seats and desks old, dirty and more or less marred and carved. The ceiling has been wet and the plastering likely to fall at any time. There are 35 seats. The room is 24x32x12 feet. The only method of ventilation is by windows as ventilating heater heats but does not ventilate.

Room for Grades 5, 7, 8.—Seventeen enrolled. Light insufficient. There are four windows. Floor bad. Light on one side. Dimensions 32 by 26 by 12 feet. Black boards are dull and not satisfactory. This room is up stairs in the old part. Was occupied at time of inspection. The air was bad. No method of ventilation except by windows.

Primary Room.—This is a down stair room and in new part of the building. Thirty-nine pupils enrolled. Dimensions 32 by 26 by 12. Light is sufficient but is from two sides, 6 windows in all. Floor is bad.

Remarks.—The large room down stairs is badly lighted, not having more than 60 per cent. of light required. There is a crack in the second floor in front hall up stairs. This crack is where the new addition joins the old. Shades are all old and dirty.

Opinion.—This schoolhouse never was sanitary, is badly planned and poorly built. It is wholly unsuitable for school purposes and I recommend its condemnation.

After consideration of the above sanitary survey, the schoolhouse at Ingalls, Madison County, Indiana, was condemned, and the following proclamation of condemnation was adopted:

Proclamation of Condemnation.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Ingalls, Madison County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency, therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse at Ingalls, Madison County, Indiana, is condemned and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of sanitary inspection of school building in District No. 1, Wayne Township, Marion County, known as the Flackville school, April 10, 1912, W. F. King Inspector:

Site.—The site comprises about an acre of ground bordering on the public road. The site is low, and especially low immediately surrounding the school building. The surface drainage is received from two sides of the lot so that in wet weather the larger part of the school ground is a mudhole. This is especially true immediately surrounding the building, where it is shown that the pupils have but recently been compelled to wade through mud several inches deep. No walks lead from the road to the building, and no walks are provided from the school building to the outhouses or to any part of the ground. On the east side of the building, within thirty feet of the windows of the east room, there is a barn with its accompanying manure heap almost directly beneath the schoolroom windows.

Building.—Exterior. The building is of brick construction, one story in height and containing two class rooms and an entrance hallway. The building is old and badly dilapidated. The outside walls are cracked, sections of the wall are missing and have been repaired by boards and cement work. There is no basement and no foundation wall, the brick wall of the building being continued into the ground as a foundation. The roof is in good condition over the east room, having but recently been put on. The west part of the building is old and in bad condition. There is no spouting of any kind on the building.

Building.—Interior. Two class rooms and an entrance hall, the entrance hall being also used for a cloakroom The east room is 32x24x16 feet in dimensions, giving a cubical content for fifty pupils, while the seating capacity is forty-two. This room, therefore, is not overcrowded. The room is lighted by three windows on either side and heated by a box stove with no jacket. The walls are insanitary, the paper is hanging loose in many places and the floor is bad and extremely insanitary. The seats and desks are old, stationary and in bad condition.

The west room is 36x25x14 feet in dimensions, giving a cubical content for fifty-six pupils while the actual attendance is sixty-one. The attendance in this room earlier in the year was seventy-one, ten of the pupils having been taken out and sent to another school. This room is, therefore, badly overcrowded. This room is lighted by four windows to the west and one to the east. The light is insufficient and poorly distributed. The walls of this room are in bad condition, plastering being cracked in a number of places and loosened in other places. The walls and ceiling are more or less covered with cobwebs and are extremely insanitary. The floor is in bad condition and likewise insanitary. This room is heated by a stove, located in the middle of the room without any protecting jacket.

There has been much sickness in this school and at the time of inspection several pupils were out of school on account of colds, and a number were in attendance who should have been excluded from the school for the same reason. There are two doorways to the building, one entering the hall and one opening into the west room. No ventilation is provided for in the building except from the windows, and it was found on examination that but one window in either room could be raised or lowered.

Water Supply.—The water supply is obtained from a driven well about thirty feet to the south of the building. The common drinking cups are used. The pump to the well stands in a mudhole, there being no trough provided for carrying away waste water and no walk leading from the building to the well.

Closets.—Out door closets, separate for the sexes, are in use. These closets are of brick construction, neither closet having a door and neither closet being thoroughly screened. As stated before, no walks lead from the school building to the closets. The boys' closet is filthy in the extreme, is indecent, immoral and vicious. The urinal connected with the boys' closet empties directly on the ground and smells to heaven.

General Conditions.—Two exits from the building, no towels, no washbasin, no artificial lights, floors are not oiled, dry sweeping and dusting is followed, playground is a mud hole during greater part of the school year.

Recommendations.—This building, together with its site, its water supply, the closets and everything pertaining thereto, should be condemned to take effect immediately at the close of the school year without any relief whatsoever, and in the strongest possible terms.

After consideration of the above sanitary survey the Flackville schoolhouse, in District No. 1, Wayne Township, Marion County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Flackville schoolhouse, in District No. 1, Wayne Township, Marion County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Flackville schoolhouse in District No. 1, Wayne Township, Marion County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of sanitary inspection of shoool building in District No. 8, Perry Township, Marion County, April 10, 1912, W. F. King Inspector:

Site.—This building is located on high ground about one-hundred feet east of the public road. This site is well drained, contains a number of large shade trees and is well suited for a school site.

Building.—Exterior. The building is very old and the outside walls are cracked and badly dilapidated. The building rests upon a stone foundation, about one third of the foundation at the rear of the building being completely under ground. The roof of the building is in bad condition and there is no spouting on the building.

Building. Interior. The building contains but one room, which is 38x25x14 feet, giving a cubical content for sixty pupils, while the seating capacity is thirty-two. The room, therefore, is not overcrowded. The walls of this room are in bad condition, paper is hanging in strips over much of the walls and the floor is bad. The room is heated by a box stove, lighted and ventilated by three windows on each side.

Basement.—There is no basement in the building.

Water Supply.—The water supply is from a driven well about thirty feet from the building. This well is not properly protected from surface drainage.

Closets.—The closets are located at the rear of the building and are separated for the sexes. These closets are frame construction without doors and without screens. The boys' closet is especially filthy, so that it is impossible to be used for the purpose for which it was constructed. That part of the school ground immediately behind the school building is used as a closet by the boys so that this portion of the school ground is extremely filthy. The closets are so placed that drainage from the closets and from that part of the school ground above mentioned leads directly to the well from which the water supply is obtained. No walks lead to the closets, nor to the well, and no walks lead from the roadway to the school building.

General Conditions.—This building is old and obsolete and should have been retired years ago. It is totally unfit for school use and should no longer be permitted to reflect the attitude of an enlightened community toward the future citizens of that community. It is therefore recommended that the State Board of Health condemns this building for school purposes, the same to be in effect at the close of the present school year.

After consideration of the above sanitary survey, the schoolhouse in District No. 8, Perry Township, Marion County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse in District No. 8, Perry Township, Marion County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse in District No. 8, Perry Township, Marion County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of schoolhouse at Waynetown, Montgomery County, Indiana, May 4, 1912, by J. L. Anderson:

Site.—Southeast part of town. High, dry, natural drainage good. There are no noisome or unhealthful conditions. The walks are brick from the street to the building, and from building to outdoor closets. Ground comprises about one acre.

Building.—Two-story brick, metal roof, brick foundation, without any slate or stone between the basement and the building proper. The building was erected in 1881. Down-spouting in fairly good condition. The roof was reported to have leaked continuously the last twelve years. The walls are cracked from foundation to roof on the east, south and west sides. The building faces the north, and is built in an L shape.

Building.—Interior. There are seven rooms in the building. Three below on first floor and four above. Entrance to this building is a cement porch, reached by two steps from the ground, about 10 by 16 feet with a good roof over it. The entrance hall is in the northeast, 16 by 18½ by 13 feet. This room has hooks all around the walls on which to hang clothing and hats. In the east end of this room a stairway runs up to the upper floor. This stairway is five feet wide and reverses half-way the height of the stairway with a broad landing and a large window at the top of the landing. It is in good condition. The primary room, No. 1, is lighted by four windows, two in the east and two in the south. There are 45 pupils in this room, 53 seats. Floor was in fairly good condition, oiled and clean, but was well worn. The west wall was slightly bulged, and the plastering all around the ceiling was broken from the walls, also cracked overhead and on the sides. The walls were very badly smoked. There were blinds to all the windows. Good slate blackboards on the walls. The seats were old, many of them showing knife marks and initials cut in the tops, and on the shelves under the top. In some of them the shelves were practically whittled away. The second and third grade room was of the same size, and same conditions, with the exception that the hot air register in this room was directly over the furnace, and the trustee reports that on one or two occasions, when trash and paper had been allowed to fall through the grating of the register, it had caught fire, and blazed up into the room, thereby showing a dangerous condition of the radiator. The fifth and sixth grade room is same size as others, and the conditions were the same as to lighting and walls. The hot air register was not, however, in such a dangerous place. The upper floor comprised three recitation rooms of the same size and conforming to the description of the ones below, with the exception of two south rooms. The plastering was in a worse condition than in the ones below, and water marks showing leakage from the roof. The high school used the two west rooms. First room had an enrollment of thirty-six. The second room had an enrollment of forty. The seventh and eighth grade room, just above the fifth and sixth below, had an enrollment of twenty-eight. In the northeast corner of the hall was a recitation room, 10 by 16 feet with chairs instead of desks. The lighting in all these rooms was insufficient. The ventilation was from foul air ducts, built into the chimneys, opening in at least two rooms connected in some way with the hot air ventilator, so that soot blew out of the foul air ducts onto the floor. As the school was dismissed, we could not see the appearance of the pupils, but the trustee reported that they had difficulty in heating the west rooms, when the wind was from the west. The rooms were kept clean, and showed from the appearance that the janitor had tried to do his part in so far as sweeping and dusting was concerned.

Basement.—Entrance to the basement was obtained by a stairway below the stairway leading up from the front hall, also from an outside entrance stairway on the east side. This basement had been dug about thirteen years. The sides were walled up with brick, and the floor had been cemented with only enough excavation made for the two hot air heaters, and a fuel room. The hot air heaters were surrounded with brick, which had shrunk away from the iron, leaving cracks all around the front and were burned out very badly. It would be necessary to renew them if they were to be used another year. They used both wood and soft coal in these heaters.

Water Supply.—The water supply is from a deep driven well, at the northeast corner. This is surrounded by a cement basement, which also extends across the front of the porch with a cement catch basin, and drainage leading out to a ditch to the north of the building. There is no water bucket or cooler. The pupils obtain their water from cups at the pump, which were of both tin and porcelain.

Closets.—These closets are out doors, one at the southwest and one at the southeast corner of the yard. There are brick walks leading to them. The boys' closet at the southeast corner is a frame, shingle roof building about 12 by 14 feet, with fixed wooden shutters on each side for ventilation. There was a brick wall built under for a foundation, and a brick vault. The walls of this vault had fallen in, leaving the side of the back part of the building open, and exposed. The interior was very dilapidated. It had been kept in fairly good condition, so far as cleanliness and odor was concerned. The girls' closet was the same construction, but the conditions were not so bad, but the interior was badly worn, and should be removed. Condition as to the cleanliness and odor were the same as the other.

General Conditions.—Exit from the upper to lower floor by reverse stairway and from the lower floor to outside was by double doors. The playgrounds were large and plenty of room. Artificial lights were oil lamps. Floors were oiled and kept clean by janitors.

In conclusion would say that the construction of this building would be impossible to be remodeled and put into a good sanitary condition. It is necessary through the fact that the only ventilation is through the foul air ducts, which the trustee admits at times does not work. The light is insufficient for the size of the rooms. The walls are cracked, as stated before, from the foundation to roof on the south, west and east sides, and have begun to bulge slightly. The trustee informs me that this building was built by the school corporation of Waynetown and the township trustee. That there is no indebtedness which would prevent them putting up a new building, and he seems to be much in favor of doing this. He also informs us that there will be a graduating class of eighteen pupils, who would be compelled to go away from their township, unless there were some steps taken to remedy present conditions, and he is certain that a majority of patrons of the school are in favor of having a new building. I would recommend the condemnation of the building and that notices of the same be sent to William L. Combs, secretary of the town school board of Waynetown, Indiana, and O. S. Osborne, trustee, Waynetown, Indiana.

After consideration of the above sanitary survey the schoolhouse at Waynetown, Montgomery County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Waynetown, Montgomery County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse at Waynetown, Montgomery County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of a sanitary survey of the Earl Park school building, District No. 3, Richland Township, Benton County, Indiana, May 6, 1912, W. F. King, Inspector:

Site.—This site is almost ideal, the school ground being high and dry, well drained, conveniently located and not near any noisome or unhealthful conditions. Dry cement walks lead from the sidewalk to the building.

Building.—The building is of two stories, brick construction, and erected in 1897. The outside walls are solid and in good condition. The building has a stone foundation. The spouting is good.

Building.—Interior: There are six class rooms, three on the first floor and three on the second with a cloakroom for each class room. The stairways leading from the first to the second floor are narrow and winding and would be extremely dangerous in case of fire, especially in view of the present arrangement of furnaces in the basement, two of which are practically beneath the stairways. Each class room is lighted from two sides, there being five full length windows at one side of each room and three high windows in another side of each room. These high windows are closed at present by blinds fastening firmly to the window frames so that practically the rooms are lighted from but one side. The floors and walls of the class rooms are in fair condition only, the walls everywhere being discolored by smoke, thus giving mute but positive evidence of smoking furnaces. The seats and desks are of an ancient type and absolutely unfitted for a modern school room. Blackboards are in fair condition.

The heating equipment of the building consists of three Smeade furnaces and the Smeade system of dry closets is in use. The ventilation is by gravity through a small window in the basement connecting with openings leading to the furnaces. None of the class rooms are overcrowded and the light is sufficient in each room.

Basement. A nine foot basement extends under the entire building, only the toilet rooms and the corridors leading to the toilet rooms having a concrete floor. The rest of the basement having no floor.

Water Supply.—The water supply is from a driven well located about twenty-five feet from the school building. Common drinking cups are used.

Closets.—Indoor dry closets of the Smeade type are used. A strong odor is noticeable throughout the entire basement.

General Conditions.—The building is equipped with a wooden fire-escape. No towels or washbasins are used, no rest room, no lunch room and no artificial lights.

Conclusions.—This building, as it now stands, is extremely insanitary and entirely unfit for school purposes. The heating and ventilating system in use never has been satisfactory, cannot be made satisfactory, and should be discarded. While it is not necessary to condemn the entire building, for the reason that the building can be remodeled and made to comply with the sanitary schoolhouse law, yet the heating, lighting, ventilation, closet system, seats and desks, and water supply should be condemned. It is, therefore, recommended that a condemnation order be issued in this case to apply to the heating, ventilation, lighting, closet system, seats and desks, water supply and basement, and that this condemnation order shall be in force and effect on and after June 1, 1912.

After consideration of the above sanitary survey, the heating, ventilation, lighting, closet system, seats and desks, water supply and basement of the Earl Park School Building, District No. 3, Richland Township, Benton County, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse known as District No. 3, Richland Township, Benton County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency, therefore, the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as District No. 3, Richland Township, Benton County, Indiana, is condemned so far as the heating, lighting, ventilation, seats and desks, water supply, basement and dry closets are concerned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of inspection of Milgrove School, Owen County, Indiana, February 29, 1912, by John Owens:

Site.—Fairly high and well drained but very small, about 300 feet x 200 feet.

Building.—The old-fashioned, box building, shingle roof, leaking, set on corner stones and open underneath, size 28x32, facing west.

The floors in this building are sagging, in many places open, the plastering is blackened and dirty all over, and falling off; seats are the old-fashioned double forms, marked with the "jacknife's carved initials"; the blackboards are painted on the wall between windows on the south but in front they are slate. Heat is supplied by an old red stove and there is no arrangement whatever for ventilation, save around doors and rattling windows, through woodwork warped out of alignment, imperfect floors and the like. There are thirty pupils housed here under conditions that would be declared cruelty to animals if they were pigs. Cross-lights prevail everywhere, and dirt and filth prevade every inch of space in the building. Dr. Gray of the Milgrove Sanitorium told me the place is a rendezvous for tramps. There is no lock on the door, and body lice have been in the schoolroom. Ratio of light to floor area 1 to 4, and each pupil has 388 cubic feet of air space.

The Privies.—Are an abomination unto the Lord—boards off, no screens about the boys', and no privacy.

The Well.—Is a dug well, shallow, and the pupils say the water tastes bad.

This building should be condemned to take effect the last day of school term—only five days more of the present term.

After consideration of the above sanitary survey, the Milgrove school, No. 2, Taylor Township, Owen County was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that Milgrove school, District No. 2, Taylor Township, Owen County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Milgrove school, District No. 2, Taylor Township, Owen County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Sugar Ridge schoolhouse, Patoka Township, Pike County, Indiana, April 11, 1912, by Dr. E. S. Imel:

Site.—Grounds about one-half acre, fairly well located. A little too rolling, yet not badly situated.

Building.—Brick foundation in fairly good condition. Frame building. Weather-boarding broken in many places and pretty generally old looking. House about 27x21 feet with 10-foot ceiling with many holes to see through here and there. Four windows on either side, four panes to each sash, 10x12 glass. Flue in center of building and stove in center of room. Floor practically worn out. Green blackboards on end of building. Outer door (entering cloakroom about 8 feet by 12 feet) broken and in bad condition. Shingle roof in good condition.

Outhouses.—Two old shacks for privies. No coal house.

The house could be remodeled but in its present state is in bad sanitary condition.

After consideration of the above sanitary survey, Sugar Ridge schoolhouse in Patoka Township, Pike County, Indiana, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that Sugar Ridge schoolhouse in Patoka Township, Pike County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency, therefore the Indiana State Board of Health, according to the statutes.

Orders: That said Sugar Ridge schoolhouse in Patoka Township, Pike County, Indiana is condemned and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of school district at Mays, Rush County, Indiana, March 28, 1912, by John Owens:

Site.—The building is located in the northeast part of town on a sloping site which can be approached only by deep gutters along two sides.

The site is without drainage other than natural drainage, and the front of it was covered with water on the day of inspection. Another thing that makes this site objectionable is the fact that the rear is much higher than the front part of the yard.

Building.—The building is a two-room frame building, is dilapidated and all out of repair. Some of the window-panes are missing, the floors are bad and the walls are black and grimy with an accumulation of coal smoke through long periods of time.

The advanced room, which occupies the south half of the building, is 27x24 feet. The relation between the light area and the floor area in this room is about 1 to 10. The furnace is in very bad condition and seats are non-adjustable type, are double and are much scarred with the jack knife's carved initial. The heat is from the stove and the teacher reports that it is hardly adequate during the cold weather. No ventilation is provided for except through broken window-panes and around the doors and windows. On the day of inspection the air was very bad, the teacher was all fagged out and things were generally negative to good school work.

The primary room occupies the rest of this floor, located on the north, and is black and dirty. Has essentially the same black and cross-lights, is wholly without ventilation, is improperly heated and unsuitable for school use.

There is a well on the premises but at the present time it is not being used, the water being carried from a livery barn across the street.

It is recommended that this building be condemned as unsanitary, and that the site also be condemned for reasons already given and because of the fact that it is located just across the street from a breeding barn.

After consideration of the above sanitary survey the schoolhouse at Mays, Rush County, Indiana, was condemned, and the following proclamation of condemnation was adopted:

Proclamation of Condemnation.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Mays, Rush County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse at Mays, Rush County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary inspection of schoolhouse No. 8, Ripley Township, Rush County, by Dr. Frank H. Green:

Site.—The site contained about one acre, one half of which lies across the road from the schoolhouse. It is high and can be well drained.

Exterior of Building.—A one-story frame building, roof in fairly good condition, siding torn off in places, no basement and no foundation, building only one foot off of ground at one end and almost on the ground at the other. I am informed that this building was constructed about the year 1853.

Interior of Building.—Contains one room, 23x25 feet, with one door and eight windows, three on the east side, three on west and two on the south, ceiling, 11 feet in height. All windows of uniform size, 5 feet by 2 feet 6 inches. No plastering in the room. All walls and ceiling are of lumber. Blackboard made by painting a portion of the north wall black. Desks and desk seats not adjustable. Heated by one stove in the center of room, protected by shields of galvanized iron. No cloakroom. The floor is rough, full of cracks which prevents proper cleaning of same.

Water Supply.—Water supply is from a dug well 22 feet deep, which in my opinion is doomed to become infected at any time.

Outhouses.—Both outhouses are dilapidated and filthy; no walks leading from building to them.

Owing to said facts herein stated I ask that this building be condemned for school purposes after June 12, 1912.

After consideration of the above sanitary survey the schoolhouse known as District No. 8, Ripley Township, Rush County was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse known as District No. 8, Ripley Township, Rush County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse, known as District No. 8, Ripley Township, Rush County, Indiana is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of schoolhouse at Moscow, known as District No. 9, Orange Township, Rush County, Indiana, by Dr. Frank H. Green:

Site.—Containing about three and one-half acres. High, well-drained and underlaid with limestone, there being only fifteen inches of soil on top of stone. Site not within five hundred feet of steam railroad, livery stable or barn used for breeding purposes.

Exterior of Building.—A one-story building containing four study rooms, hall and cloakrooms and basement. Foundation is of stone, walls are brick, both of which are in good condition. Roof of shingles with tin deck about twenty feet square, which is in bad condition and leaking.

Interior of Building.—Number and size of rooms as shown on drawing attached hereto. Floors in fairly good condition. In room designated as room 1, and hall, plastering had fallen to the floor. Ceilings show that roof has been leaking. All blackboards are black and in fairly good condition. Light is admitted from three sides in rooms 1 and 2 and from two sides in rooms 3 and 4, which makes it impossible to comply with the schoolhouse law requiring that rooms shall be lighted from one side only. Desks and desk seats in room 1 are adjustable, but in rooms 2, 3 and 4 they are not adjustable. Heating is by direct hot air from furnace in basement located in room 4. Radiators are placed in the floor. No ventilating ducts of any kind are provided.

Outhouses are dilapidated, filthy, not separated properly and no walks leading to them.

Water Supply.—Water supply is from four-inch tubular well over one hundred feet in depth, which, in my opinion is all right. There are no troughs or drains to take waste water away. Enameled metal drinking cups are provided.

From above stated conditions as found by me and herein reported, I ask that said school building be condemned for school purposes after May 1, 1912.

After consideration of the above sanitary survey the schoolhouse at Moscow, known as District No. 9, Orange Township, Rush County, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Moscow, known as District No. 9, Orange Township, Rush County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse at Moscow, known as District No. 9, Orange Township, Rush County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of investigation of schoolhouse conditions at Gentryville, known as District No. 4, Jackson Township, Spencer County, Indiana, made April 11, 1912, by John Owens:

Site.—High, fairly well drained by natural drainage, but schoolhouse sits on a low place near the crest of a noll. Some shade; about 1½ acre in extent.

Building.—Is of brick, two stories—five rooms, with ten-foot corridors above and below and has an old metal roof covered with asphalt roofing. The building is in two parts, an old section built forty years ago, and a newer part which has been standing perhaps twenty years. These buildings, while originally joined, are falling apart and are held together by long iron bolts on both floors. The walls are cracked on the outside in many places and the building has a generally dilapidated appearance. It rests directly on the ground, the floors being low, and there is no basement. The stairways are entirely too narrow, being only about four feet wide, and they show signs of giving away. Extra props have been placed under them to prevent their giving down further. The building is about 60 feet north and south by 48 feet east and west.

First Grade Room.—Is on the southwest; walls dirty, floor cracked and giving way. Plastering cracked and falling off. Desks double, much scarred. Heated by stove. No ventilation. Light area is too small. School not in session. Enrollment not known. Light from rear and left. This room lost 168 days from sickness the present year, according to Dr. C. W. Bradley, health officer. He attributes much of it to insanitary conditions and lack of proper heat and ventilation.

Room Two.—Occupies southeast corner of first floor, is dirty, has bad floors, light area is too small. Cross-lights and eye-strain prevail, and this room lost 128 days of present school term from colds, grippe and pneumonia, due in large part to bad schoolroom conditions.

Third Grade Room.—Occupies the north half of the first floor and is essentially the same as the bad, insanitary conditions in the other rooms described. This ground floor room lost 138 days from diseases brought on or encouraged by the insanitary conditions that are found therein and thereabout.

Fourth Room.—Occupies the south half of the upper floor and is very dirty and filthy. In fact these rooms practically duplicate each other in bad conditions.

High School Department.—Occupies the north half of the upper floor and is like the rest as to cross-lights, bad walls, floors, furniture and the like. It is heated by a stove and has no ventilation.

Out Buildings.—Are of brick, old, in bad condition. No screens or walks.

Water Supply.—The well is open, of the old oaken bucket style, except that a windlass is used.

Recommendations.—This school building should be condemned as wholly unsanitary and probably unsafe.

After consideration of the above sanitary survey the schoolhouse at Gentryville, known as District No. 4, Jackson Township, Spencer County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Gentryville, known as District No. 4, Jackson Township, Spencer County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore, the Indiana State Board of Health, according to the statutes,

Orders: That said schoolhouse at Gentryville, known as District No. 4, Jackson Township, Spencer County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Inspection of basement of West Side school building, Shelburn, Indiana, February 27, 1912, by John Owens:

Site.—Good—well cindered—many seesaw boards, etc.

Building.—Brick—comparatively new—faces south.

Closets.—Outside floor.

Heating.—Hot air system. Cold air chambers damp. Much rubbish, should be cleaned, white-washed and floors cemented. Cold air intakes not being used, and in one instance nailed down.

Ventilation.—By windows and foul air shafts near floor. In one of the basement rooms inspected one of these outlets was covered by a large framed picture.

Basement Rooms.—One on east and one on west side of building, similar. Each is 30x40 feet with 7½ feet ceiling, and each has eight windows hinged at top, each admitting 9 square feet of light. Ratio of light to floor area 1 to 16, and the north side of east room is very dark. Each room seats about thirty-five pupils and has 274 cubic feet of air. Each of these rooms is approached by a small, dark, narrow passageway leading directly by and very near the door of a furnace, and there is no other exit in case of the west room, and in this instance we found the door tied shut and the small vestibule full of junk, and the flight of stairs leading therefrom covered with flower-pots, schoolroom refuse and the like. In case of a fire starting near these furnaces the avenues of egress would be completely shut off.

With a member of the board present the fire alarm emptied the building in about one minute, all basement pupils coming out via the furnaces, although the board had issued orders that these rooms empty through outside windows and the door referred to above.

The hot air pipes leading to rooms above pass through these basement rooms and long stove-pipes lead along the ceilings.

Rooms were very hot—east room 80°, west room 92° and without ventilation. School was stopped until the temperature was lowered by fresh air being admitted from outside.

It is recommended that these rooms be condemned to take effect the last of this term and that other quarters be provided before another school term.

(The Board, including Dr. Maple, have already a scheme of this kind on foot and it is probably the best solution to relieve the conditions for a time in this badly-in-debt overgrown mining town.)

After consideration of the above sanitary survey, the basement of the West Side Schoolhouse, Shelburn, Indiana, was condemned and the following proclamation of condemnation was adopted:

Proclamation of Condemnation.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the basement of West Side Schoolhouse, Shelburn, Sullivan County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes, Orders: That said basement of West Side Schoolhouse, at Shelburn, Sullivan County, Indiana, is condemned and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said basement for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of Inspection of Brownsville School, Brownsville, Union County, Indiana, March 28, 1912, by John Owens:

Site.—The site of this building is low, very muddy and without adequate drainage. It is within two hundred feet of the C., H. & D. railroad, and is well wooded. It comprises about three quarters of an acre.

The building is an old brick building, two stories high, without basement except for a hole dug in the ground. It contains four rooms, one of which is not used for school purposes but at the present time is stored with cement and various other commodities—boxes, junk and the like.

The room on the first floor is the primary room, is very dark, walls are in bad condition, seats are old and dilapidated, floors are bad and is occupied by forty pupils. The windows are on two sides of the room and cross-lights prevail. The relation between the window area and the floor area is 1 to 5. Each pupil has 192 cubic feet of air space. The heating in this room is provided by a large Peck-Williamson furnace which smokes voluminously whenever the door is opened. The "fresh" (?) air intake is through the dug out hole in the basement with an opening foundation to the outside.

The intermediate room is up stairs and to the north. It has light admitted from three sides and the pupils sit facing one of these sides. This room is also dark, much smoke, plastering is cracked and falling off, the furniture is old and much scarred, blackboards are between the windows in part and cross-lights are everywhere. The heat for this room is supplied by a Peck-Williamson furnace and the "fresh" (?) air intake is located in the junk room on the first floor. This furnace also smokes into the room and practically every feature of the law is violated here. There are no foul air ducts in any of these rooms. The relation between the light area and the floor area is about one sixth, and each pupil in this room has a required amount of air space.

The high school room occupies the rest of the second floor, has light coming from two sides, walls are much blackened, furniture old, floors bad, blackboards in part between the windows, and pupils anywhere in the room are exposed to the cross-lights. The heat from this room is supposed to be obtained from a large stack that passes up from the furnace in the primary room below. This stack is double, has register in the outside casing and seems to give sufficient heat. It should be noted, however, that the "fresh" (?) air comes from just under the ceiling from the primary room below. There is no ventilation provided for other than by windows and doors. This room is also very dark. The light area is about 1 to 7, and owing to the numerous shade trees on the outside the amount of available light in all of these rooms is less than has been indicated.

The closets used in this building are surface closets, are provided with screens, and on account of smallness of the lot are located entirely too close to the school building.

The water supply is from a deep well, and so far as I can determine is satisfactory.

The building should certainly be condemned as it is probably unsafe and wholly unsanitary, but a difficulty will be met in locating a new building, this site being, so far as I can determine, the only available one in the immediate locality, and it is not very satisfactory.

Brownsville occupies a valley, and the C., H. & D. R. R. runs along the bottom of this valley. To locate a new building five hundred feet from this railroad would necessitate putting it back in the hills, and such locaton would be objectionable.

After consideration of the above sanitary survey, the Brownsville School at Brownsville, Union County, Indiana, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Brownsville School at Brownsville, Union County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Brownsville School at Brownsville, Union County, Indiana, is condemned and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of school building No. 12, Highland Township, Vermillion County, Indiana, known as the Gessie School Building, by Dr. O. F. Wellenreiter.

Site.—Wet, muddy, not drained at all. No walks. Barn lot on south.

Building.—One story, frame, condition of walls and roof fair. No spouting. Foundation very low.

Interior.—Two school rooms, each room has two small cloak rooms 5 feet by 7 feet. No stairways. As to corridors, one to each room 40 feet by 22 feet by 11½ feet high. Seven windows to each room. Floors in bad condition. Walls cracked and dirty. Ceilings in bad condition. Seats and desks single, new.

Heating.—One stove in each room, very much difficulty in keeping an even temperature. Temperature varies. Hard to maintain an even temperature. Some pupils too hot, and others in back of room very cold.

Blackboards fairly good. Ventilation, none except by windows. Number of pupils in room for small ones, forty; the other room, forty-two. General appearance of pupils: many are wearing glasses, otherwise they seem well at present.

Basement.—None.

Water Supply.—Water is obtained from a well on the grounds. Iron pump. Cement around pump. Well is not far from horse lot. No provision is made for drinking cups, children bring their own cups. No water cooler.

Closet.—Indoor none. Two small closets at back of grounds, dilapidated and very dirty, and one of them is very filthy, feces on seat, odor violent. No screens, no walks, and general condition unhealthy.

General Conditions.—Exits one to each room. Saw two towels and two wash basins. Playgrounds. The grounds are on one-half acre, building in the center, but little room for play, therefore, they trespass on adjoining ground, much to the annoyance of neighbors. No rest room. No lunch room. No janitor. Floors were oiled before school began and some of the pupils have done all the janitor work. Sweeping dry without much dusting.

From the foregoing, I would conclude and recommend that this school building and site be condemned for several reasons: First, the grounds are too small and wet. Second, the close proximity to the neighboring horse lot and to the neighbors who are being constantly annoyed, their grounds invaded, their fences broken down and otherwise disturbed. Third, the building being in a very insanitary condition and hard to heat properly. Fourth, the light question, many children here have been compelled to wear glasses, and others have been advised to have their eyes examined. Fifth, the condition of the closets is exceedingly bad.

After consideration of the above sanitary survey the Gessie school building, District No. 12, Highland Township, Vermillion County, Indiana, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that school building No. 12, Highland Township, Vermillion County, Indiana, known as the Gessie School Building, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said school building No. 12, Highland Township, Vermillion County, Indiana, known as the Gessie School Building, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said school building for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of public school building in the city of State Line, Warren County, Indiana, March 6, 1912, by Dr. S. S. Delancey.

Site.—In a public square, with trees in center of said city, with business buildings and stores on north and west side, about three blocks from Wabash Railroad. There are good walks from northwest and southwest and west leading to front doors, also good walks to water closets. Ground is flat but not muddy.

Building.—Of frame, two stories, 24 feet wide and 36 feet 6 inches long. Ceiling in first floor is 11 feet high and second floor 10 feet high. Entrance in front by vestibule 6 feet by 12 feet with a narrow stairway leading to second story. Stairway is 2 feet 6 inches wide, winding, and in case of fire would be very difficult of exit. The second floor is in very poor condition. A new one has been laid on the first floor. There are 16 desks in each room for two pupils to a desk, which are old and in bad condition. Heating is by two large stoves, one in each room. Lighted by eight windows, 4 lights to window 14 inches by 36 inches. The sashes do not fit in some of the windows. They drop two inches and a few glasses are broken. No means of ventilation, only by opening windows. Walls are in bad condition. Plastering is off and paper hangs loose in many places and the roof leaks around the chimney, etc. Blackboards are poor. There are no cloakrooms. Wraps hang in school rooms. Foundation is brick, in fair condition. No basement.

Water Supply.—From bored well 140 feet deep and pumped by a gasoline engine. A sample of this water has already been furnished by Dr. A. N. Lakin for analysis. Drainage from well is poor and should be improved.

Closets.—Outdoor, fair state of cleanliness. Walks to same, gravel. Separate for sexes but board screens are not high enough and some of the boards are off.

General Conditions.—Exits by front doors which open out. No fire-escape. Floors are oiled and are fairly clean.

From above this building needs a general overhauling. New windows, new roof, new stairway, new floors, new desks. As there is so much required, would most respectfully recommend that a new building would be the best for all concerned.

After consideration of the above sanitary survey the schoolhouse at State Line, Warren County, Indiana, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the school building in the city of State Line, known as District No. 1, Kent Township, Warren County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes, Orders: That said school building in the city of State Line, known as District No. 1, Kent Township, Warren County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said school building for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Report of survey of Bentonville School Building No. 5, Posey Township, Fayette County, Indiana, April 30, 1912, by J. L. Anderson:

Site.—About one acre in extent. The north half of the grounds is high but slopes to the south rapidly, making the south half liable to overflow of water. This can be remedied by filling in the south half of the grounds with good soil and tiling to put it in sanitary condition, thereby giving plenty of room for playground for pupils. There is no proximity to railroads or other places that would attract attention of pupils by noises.

Conditions.—The conditions are good, with a tile running through the lower grounds. The grounds face to the west. A walk made of stone flags leads from the front gate to the entrance of the school building. The school building is a two-story frame building on stone foundation. The roof is part shingle and part slate. The foundation is in fair condition with iron ventilators in the walls for ventilating the building. There is no basement. The building is in fair condition on the outside but needs to be painted. The roof leaks a little in the upper east room. The spouting is in fair condition.

Building.—The entrance is at the southwest corner of the building. A portico about nine feet square with a stone flag for floor at the front door. The door swings both ways on hinges. The hall is 9 feet 6 inches by 30 feet by 12 feet. The stairway in this hall is four feet wide and leads straight up to the upper hall. This is a boxed in stairway. At the rear of the hall is another hall passing north and south with doors at each end.

This hall is about 6 feet wide. On the east side are three small rooms, one is cloakroom, one rubbish and storeroom and the other is the principal's room. To the left of the entrance is a primary school room 23 by 33½ by 12 feet This room is lighted by two windows on the south, two in the west and four on the north It is heated by a coal stove in the west end of the room, which is surrounded by a metal jacket The windows are all curtained The blackboards are simply painted on the walls. The papering on the walls is blackened by smoke and soot. Ventilation is through windows and doors, also by two air ducts passing into the room from the outside, which insure fairly good ventilation. As there was no fire in the room I cannot say what the temperature was. The seats were old but in fair condition. The flooring is badly worn and should be replaced with a new floor, and there are cracks large enough to pass a lead pencil through. Number of seats in that room- 43. The rooms upstairs correspond to the one below, 23 by 33½ by 12 feet. Conditions as to light, heat and ventilation the same. Thirty-four seats. Condition of the floor was better than the lower room. The plastering in this room was cracked and needs repairing and the same conditions exist as to smoke, dirty walls and ceiling as in the lower room. The second room was about 23 by 20 by 12 feet. The floor in this room was in very bad condition. The ceiling and walls were covered with smoke, and around the chimney were water marks showing where the water had leaked in. Number of seats in this room 19.

Water Supply.—The water supply is from a public well and is carried in buckets about three hundred feet from the public well. This well is situated in the village. The well on the school ground has been discontinued.

Cloak Rooms.—The cloakrooms contain shelves and strips of wood on the walls, in which to set dinner buckets and to hang cloaks and hats. There are water coolers in each one with galvanized cups for drinking.

Closets.—The closets are out of doors at the rear of the building, with flag walks leading to the boys' toilet and gravel walks leading to the girls' toilet. High board screens divide the sexes. Conditions were fair. The closets had evidently been cleaned prior to the beginning of the school and had been kept in fairly good condition for outdoor closets.

General Conditions.—The building is solid, well made and is in no danger of collapsing from any ordinary cause. The arrangement of the rooms is out of date and unhandy. There are no rest or lunch rooms and no lights. The floors have been oiled and kept in fairly good condition. One of the pupils is employed as janitor.

Conclusions.—I find this building insanitary and in such a generally bad condition in regard to ventilation, condition of the walls, floors and roof, that it would be necessary to expend quite a sum of money to bring it up to the standard for such buildings. I would, therefore, recommend that the building be condemned for school purposes.

Remarks.—I was informed that the majority of the patrons of this district had voted at two different meetings to build a new school building and had gone so far that they had ordered the trustee to have plans and specifications drawn by an architect for a new building, as well as an estimate made of the cost of repairing the old building. These plans and estimates were submitted to the patrons at a meeting held Saturday evening, and at this meeting after the matter had been fully discussed, they rejected the plan of repairing the building and voted to erect a new building. However, there seemed to be a question upon the part of the trustee and architect as to whether the State Board of Health would approve of the present site for the new building. The trustee, therefore, wishes an opinion from this Board in regard to that question. If the trustee and his advisory board will fill in the south part of the school grounds from eighteen inches to two feet, grading it up to the higher part with good black or sandy soil, and put in tile connecting it with a ditch, already running through the grounds, there can be no objection to their building upon the present site. As a matter of fact it is a most convenient and best location available without going into court and condemning other grounds, which would be costly and really more expensive than to put the present site in good condition, besides not being so convenient to the majority of the pupils as the present site.

After consideration of the above sanitary survey, the Bentonville school building, No. 5, Posey Township, Fayette County, Indiana, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Bentonville School Building in District No. 5, Posey Township, Fayette County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Bentonville School Building in District No. 5, Posey Township, Fayette County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

SPECIAL MEETING.

According to the order of the Board at the last regular meeting held April 12, a special meeting was held May 14 to attend and conduct the annual health officers' conference. The special meeting was called to order at 12 m.

Present: Drs. Tucker, Boyers, Hicks and Hurty.

The Secretary reported there were about 300 health officers present, that the program up to noon had been carried out as per arrangement and that conditions promised a successful afternoon and evening meeting. The Secretary further reported that Surgeon-General Blue and Past Assistant Surgeon-General Rucker had not arrived but would surely be in town early in the afternoon. The situation was briefly discussed and there being no business, the Board adjourned to meet the following day, May 15, at the Board's rooms in the State House at 2 p. m.

ADJOURNED MEETING.

According to the order of the Board of May 14, a special meeting was held in the rooms of the Board at 2 p. m. Wednesday, May 15.

Present: Drs. Davis, Tucker, Hicks, Boyers, Hurty.

The Secretary reported that Surgeon-General Blue had failed to arrive and that the evening session of the health officers' school of May 14 had nevertheless been a success.

Three speakers took up the time of the evening, Dr. C. S. Woods, Dr. Frederick Heath, and Mr. Wm. Maurer, and moving pictures were shown with the machine owned by the Board. The meeting adjourned at 10:30 p. m., a profitable evening having been spent.

The Secretary further reported that Past Assistant Surgeon-General Rucker arrived early Wednesday morning and in the forenoon session gave his paper as per program.

The following resolutions were adopted by the conference:

Whereas, It is desirable from the business, from the medical, and from all other standpoints that our State should have an efficient public health service; and

Whereas, Hygiene and sanitary science has become a distinct specialty in the science of medicine; therefore be it

Resolved, The State Health Conference, composed of county, city and town health officers, in session at Indianapolis May 14 and 15, 1912, recommends to the Sixty-eighth General Assembly that a statute be enacted requiring every county to have a county health commissioner who has made a special study of hygiene and sanitary science, he not to practice medicine but to give his whole time to the work and to be given a living salary, and to serve a term of not less than four years. The duties and powers of said county health commissioner should be fully and clearly set forth in the statute and he should be required to keep accurate and full records of the vital statistics and of all public health work done, and to make a monthly report to the State Board of Health, which in turn should be required to make an annual report for the whole State, setting forth the vital statistics and the public health work done in all the counties.

Whereas, It is well known that consumption is a house disease and that other diseases also are frequently acquired in insanitary tenements and other houses; therefore be it

Resolved, by the conference of Indiana state health officers in session May 14 and 15, 1912, That the public health and also public morals demand that tenements, and indeed all houses, should be constructed with regard to every sanitary requirement. Therefore we recommend to the people and the Sixty-eighth General Assembly that a statute be enacted requiring that all tenement houses hereafter constructed shall be in accordance with proper sanitary principles duly laid down in detail in said statute.

Resolved, That a county health officers' school or conference shall be held at least once each year in each county of the State for the purpose of discussing local conditions and securing uniform action and co-operation in public health work throughout the county. This conference shall be held at the call of the county health commissioner, who shall be the presiding officer. The attendance at this conference shall include all health officers and deputy health officers of the county, physicians, school trustees, county and city school superintendents and teachers, county and city health officials, business men and all others interested in public health work and in the enforcement of sanitary and health laws.

The Indiana Health Officers' Conference representing in its membership all the medical organizations of Indiana, hereby affirms its confidence in, and its united support of the "Owen Bill" now pending before Congress and requests the Indiana Representatives and Senators in Congress to vote for this bill.

Resolved, That this action of the conference shall be transmitted to each of the Indiana Representatives and Senators in Congress.

After considering various phases of the meeting with the view of doing better next year, it was

Ordered: The Secretary shall include the program in the minutes of this meeting to make of record the work of the health officers' school in May, 1912.

PROGRAM.

First Session—Tuesday, May 14th, 10:00 a. m.

Call to Order	President Tucker
Address	Governor Marshall
Response	Jas H. Morrison, Hartsville
Address of President	F. A. Tucker

ANNOUNCEMENTS—BUSINESS.

Duties of Health Officers	H. W. Sigmond, Crawfordsville
Discussion	C. W. Fry, Huntington
Duties, Responsibilities and Pay of County Health Commissioners	Simon J. Young, Valparaiso
Discussion	J. W. Morr, Albion

Second Session, 1:30 p. m.

Health Supervision of Schools in Valparaiso	Otis B. Nesbitt, Valparaiso
Discussion	J. E. King, Richmond
Housing	Henry B. Shacklett, New Albany
The Relation of Housing to Health	(Mrs.) Albion Fellows Bacon, Evansville
Discussion	E. A. Crull, Ft. Wayne

THIRD SESSION, 8:00 P. M.

Popular Address—The Problem of the Public Health.............Rupert Blue, Surgeon General Public Health and Marine Hospital Service, Washington, D. C.

FOURTH SESSION, WEDNESDAY, 9:30 A. M.

Practical Co-operation between Health Officers and the State Inspection Bureau............John J. Walsh, State Factory Inspector
Discussion ....C. S. Woods, Indianapolis
Should Health Officers Lecture to High Schools, and on What Subjects? ....Hugh A. Cowing, Muncie
The Future of Vccine-Therapy.....Severance Burrage, Purdue University
Discussion ....H. H. Thompson, Noblesville

FIFTH SESSION, 1:30 P. M.

Address ....W. C. Rucker
Assistant-Surgeon General Public Health and Marine Hospital Service, Washington, D. C.

Symposium:
- Health Laws
- New Legislation
- Question Box
- General Conference

There being no further business, the Board adjourned.

REGULAR QUARTERLY MEETING FOR THE THIRD FISCAL AND THE SECOND STATISTICAL QUARTER, BOTH ENDING JUNE 30, 1912.

JULY 12, 1912.

Present: Drs. Tucker, Davis, Boyers, Hicks, Hurty.

Called to order by President Tucker at 2 p. m.

Minutes of last quarterly meeting held April 12, 1912, and the special meeting held May 14, 1912, read and approved in each individual and separate part and as a whole.

REPORT OF SECRETARY FOR QUARTER ENDING JUNE 30, 1912.

This is the third fiscal and the second statistical quarter for the board year. The work of collecting the vital statistics has been pushed with increased energy and with good results. Recognizing that the basis of public health work is vital statistics, the Secretary has instructed the statistician, Dr. Carter, not to relax his efforts in the matter of compelling, according to the law, all physicians to make prompt records of deaths, births and contagious diseases; and also compelling all health officers to be diligent in the work. Dr. Carter has succeeded in securing fully one hundred certificates of births and deaths which never would have been reported had not the probing system been used. The Secretary has written several letters to newspapers addressed to the people concerning the importance of legal reports of all births and deaths. These have been sent to those localities where physicians have been found to be derelict.

EDUCATION.

Since February, 1912, the educational work of the Board has been under the field direction of Mr. John Owens. He has with the exhibit visited ten counties as follows: Owen, Greene, Sullivan, Knox, Gibson, Dubois, Spencer, Posey, Vanderburgh, and Crawford. The exhibit has been displayed in eighteen different cities and towns. Sixty-eight night lectures have been given and through the general educational means the Board has been in touch with not fewer than 40,000 people, exclusive of pupils in the public schools. Medical and dental examinations have been made of hundreds of school children by local physicians organized to the work by Mr. Owens, and these medical and dental examinations have certainly produced much good, in that pupils have carried home to their parents the acts in regard to the work and have themselves been made to understand the same. Primary lectures in hygiene have been delivered to 9,000 school children. It probably would not be amiss to say that through this work, the State Board of Health has come into direct contact with not less than 50,000 people in the last six months. The Secretary has attended and lectured in many of the counties mentioned above in conjunction with the exhibit. Dr. King, Dr. Simonds, and Mr. Barnard have also attended many of them, Dr. King having especially done much work of this kind. In every instance we have had the hearty co-operation of local physicians and dentists. The health literature distributed upon these occasions is not given forth carelessly. Only those people who after public notice ask for it, or in instances, where they promise to read it and preserve it, is the same given out. We do not think that the general and absolute free distribution of health literature is necessary and is not productive of the good which its expense incurs.

DR. SIMOND'S RESIGNATION.

I announce with regret the resignation of Dr. J. P. Simonds as superintendent of the Bacteriological and Pathological Laboratory. Dr. Simonds has made himself respected, and I might also say beloved by the medical profession of Indiana. He has demonstrated his fitness for the position he has occupied, and it is indeed unfortunate that the State Board of Health and the people of the State of Indiana must lose his services in the future. Because of his election as Professor of Hygiene and Preventive Medicine in the University of Texas with a 50 per cent. increase of salary over that now enjoyed, he has been induced to resign and change his residence. I hope the Board will deem it proper to pass an appropriate resolution relating to this resignation.

WEST BADEN WATER SUPPLY.

A matter of sufficient importance or mention here is the West Baden water supply. The authorities of West Baden applied to the State Board of Health to investigate its water supply and to give what advice was deemed proper. Accordingly, the Secretary visited West Baden, met with the board of trustees and together with these gentlemen and several citizens made investigation of the situation. After full consideration, it was agreed that the water chemist of the Board should make a technical and scientific study of the water supply, and this was done. The owner of the public works, Mr. Lee W. Sinclair, has expressed a wish to annul his contract with West Baden rather than to install efficient filtration works. The West Baden Springs Company, of which Mr. Sinclair is president and principal owner, owns the said water works. An examination of the financial affairs of the town show that it is unable to build its own water works and the disposition shown by Mr. Sinclair, if carried to the end he desires, will leave the town of West Baden without a public water supply and without fire protection. As the West Baden Springs Company supplies the great hotel which bears that name with this same water, and as the survey and analyses show the said water is not potable, it would seem most proper that legal steps be taken, if finally found necessary, to compel this company to filter its water supply and furnish to its guests a drinking water which would not be a menace to health.

SMALLPOX.

	Cases.	Deaths.	Homes Invaded.
April, 1911	202	0	28
April, 1912	141	2	25
May, 1911	207	0	22
May, 1912	72	0	19
June, 1911	90	1	16
June, 1912	91	3	17
Total, 1911	499	1	66
Total, 1912	304	5	61

TYPHOID FEVER.

	Cases.	Deaths.	Homes Invaded.
April, 1911	135	40	26
April, 1912	209	31	29
May, 1911	134	29	39
May, 1912	191	35	37
June, 1911	138	29	42
June, 1912	153	29	49
Total, 1911	407	98	107
Total, 1912	553	95	115

VISITS MADE BY THE SECRETARY.

During the quarter the Secretary made 16 visits. Hammond, April 4; Evansville, April 8; Princeton, April 9; Brazil, April 18; Evansville, April 29; Rockport, May 1 and 2; Bloomington, May 3; Knightstown, May 7; Lafayette, May 17; Richmond, May 21; New Harmony, May 23; Muncie, May 28; Anderson, May 28; Terre Haute, June 19; Fortville, June 20; Millville, June 27. Detailed reports of the above visits are herewith appended:

Hammond.—April 4th. On this date I went to Hammond to present by lectures the work of the State Board of Health before the teachers association of that district, and before the young men's church association of the city. Another object of the visit was to attend the conference of the Lake Michigan Water Association. The lectures were duly delivered to the bodies named and in the same were fully set forth the work of the State Board of Health, what it was doing, and also what it was trying to do. The lectures were both received very kindly and resolutions of thanks were passed by the audiences. The meeting of the Lake Michigan Water Association was very successful, being attended by at least 100 persons. Papers were read upon various phases of the work done by the Association and for which it was organized. The said papers will be found in the annual report of the Association. The president was Dr. W. D. Weis, health officer of Hammond, who deserves much credit for the excellent program and for the good work done by the Association within the last year. The title of the Secretary's paper was, "The Conservation of Human Vitality."

Evansville.—April 8th. This visit to Evansville was made in the interest of the exhibit which the State Board of Health will make at the Fifteenth International Congress on Hygiene and Demography. Arrangements had been made to meet with the mayor, the city council, the comptroller, and the city and county health officers. I am glad to say that the visit was successful in that these authorities of the city promised to make an appropriation with which to pay the expenses of an exhibit and of sending a delegate to the congress to represent the city, he to make a report to be presented and read before a special meeting of the council.

Princeton.—April 9th. From Evansville I went to Princeton in order to be present at Health Week as conducted under the auspices of the Board at that place. The health exhibit was shown in the court house and all lectures given in the court room. Good audiences were in attendance at all lectures, but further details of Health Week held in Princeton will be found in the report of Mr. Owens.

Brazil.—April 18th. Upon invitation of the Clay County Medical Society, I went to Brazil, April 18, to join with that city in a general public health meeting. A large audience gathered in the evening in the Sourwine Opera House where several short talks were given by the mayor of the city and the local physicians. The Secretary gave the principal address, in which particular attention was paid to the importance of the medical inspection of school children and in which special emphasis was laid upon the importance of prevention.

Evansville.—April 29th. This visit was incidental to a journey to Rockport to attend Health Week in the last mentioned city. I stopped in Evansville in order to again meet with the city authorities concerning their co-operation with the State Board of Health in making a success of the exhibit at the Fifteenth International Congress on Hygiene and Demography. A few misunderstandings were corrected and further explanation given and finally matters were clinched so that it is now settled that Evansville will be represented at the congress as stated in a former report.

Rockport.—May 1st and 2d. At Rockport I delivered four lectures on public health subjects. One was before the Women's Club of the city upon sex hygiene; one before all the boys above the sixth grade in the schools, also upon sex hygiene; and two before general audiences. The State Board's exhibit was presented that week in Rockport and was examined and studied by several hundred citizens as well as all the older pupils of the school.

Bloomington.—May 3d. From Rockport I went to Bloomington, there to deliver a lecture before the assembled student body concerning the work of the State Board of Health.

Knightstown.—May 7th. Upon invitation of the Women's Club of Knightstown, I visited the place in order to lecture in the evening and also to make sanitary inspection of the Indiana Soldiers' Orphans' Home. For this latter purpose, the date was ill timed, because upon that day the institution was visited by the Indiana Orphan's Association. Under the circumstances it was impossible to make an inspection, but I went over the institution, taking no notes and waiting another opportunity. In the evening the usual lecture upon the State Board of Health and its work was delivered to a large audience in the Presbyterian Church. The usual vote of thanks was given.

Lafayette.—May 17th. This visit was made upon invitation of the board of school trustees to lecture upon school hygiene and public health in the beautiful new high school building just erected. A good sized audience was present and the lecture was well received.

Richmond.—May 21st. This visit was made for the purpose of inspecting the dead animal disposal plant which has aroused a lawsuit. The visit was made upon the invitation of the Wayne County health officer and the Richmond city health officer. It was found that the plant was not insanitary and that it did not affect the public health, and if further suits are instituted, it will become the duty of the Secretary to so testify.

New Harmony.—May 23d. This visit was made for the purpose of attending public Health Week at New Harmony. I made three lectures upon this occasion. Our health exhibit was displayed in the council chamber and was freely visited by the citizens. The school children were given special instructions in the same and circulars were distributed as usual. Mr. Owens held many round tables and made his usual lectures.

Muncie.—May 28th. By prearrangement, I went to Muncie on this date to consult with the city authorities in regard to co-operating with the State Board of Health in the matter of representing the city at the Fifteenth International Congress on Hygiene and Demography. The mayor, and city council, city comptroller, and the county and city health officers were present, together with several physicians and other citizens. The whole matter was explained and the gentlemen and members of the city council promised, all being present, that they would at their very next regular meeting, make an appropriation and provide in proper way for representation and for the sanitary exhibit for the city.

Anderson.—May 28th. By prearrangement, I went to Anderson upon this date to meet with the city authorities concerning their co-operation with the State Board of Health in representing Indiana at the Fifteenth International Congress on Hygiene and Demography. I am glad to say that the authorities of that city promised to co-operate, to make an exhibit, and to send a delegate, the same as was also promised by the authorities of Muncie.

Terre Haute.—June 19th. The State Pharmaceutical Association being in session at Terre Haute, a special invitation being extended that the State Board of Health be represented, I therefore attended. The State Pharmaceutical Association was in session for three days and at the sessions the usual papers pertaining to the subjects in hand were read and followed by discussions. I talked upon the State Board of Health and its work, and also read a paper entitled "Science." A resolution was passed commending the work of the State Board of Health and thanking the Secretary for attending and presenting an account of its work.

Fortville.—June 20th. Upon invitation of the Hancock County Medical Society, I attended their monthy meeting in the afternoon and in the evening, under its auspices, delivered a lecture upon preventive medicine before a popular audience. The audience was estimated at 200. The lecture was kindly received and a resolution of thanks was offered.

Millville.—June 27th. Millville is situated in Liberty Township, Henry County, and a delegation of five citizens had appeared at the office of the State Board of Health, urging that I come to Millville to address a public meeting upon the importance of better schools in that township. I arrived at Newcastle at noon and was met by Mr. Geo. Hewett and Mr. John Allen, both farmers and heavy taxpayers in Liberty Township. With them in Mr. Allen's automobile I visited all the schoolhouses in Liberty Township, making an inspection of the same. These schoolhouses had all been duly surveyed prior to my visit and had been condemned by the State Board of Health. Much opposition against constructing new buildings had been aroused and it was to overcome this opposition that the public meeting was called. It was estimated that 100 citizens were present. The different phases of school hygiene were discussed and the economy and necessity of the proposed new buildings were fully considered. In order to make a train I was forced to leave at 9:20 p. m. and what action was taken by the meeting, if any, is not known at this time.

West Baden.—The Secretary reported that upon request he had visited West Baden and met with the town authorities. They had requested an investigation from the State Board of Health of the town water supply. The supply is furnished by the West Baden Springs Company of which Mr. Lee Sinclair is president. The water is pumped to a reservoir on a hill but said reservoir is not cemented, is open to pollution and so near a road that the marks left by running water showed plainly that the drainage of the road went into the reservoir. This water is drawn to a filter house where it is treated with aluminum sulphate and then filtered. It was obvious upon examination of the filter house that the treatment of the water was carried on by men who did not understand the situation and the filtered water was very little improved. This supply is also used in the great hotel known as the West Baden Hotel. It was finally agreed, after all points had been considered, that the Secretary should send the water engineer of the Board, Mr. Cravens, to make a technical examination with analyses. This has been done and the report in full will appear in the laboratory report. The conclusion was that the water is not potable and should not be used for domestic purposes.

After considering this matter it was

Ordered: The Secretary shall immediately investigate the water supply and water supply conditions at West Baden and if found not potable, he shall submit the question to the Attorney-General and proceed according to his advice.

INDIANAPOLIS SEWAGE DISPOSAL.

The following report from the city engineer, Mr. H. W. Klausmann is self-explanatory.

INDIANAPOLIS, INDIANA, July 12, 1912.

To the Honorable State Board of Health, Indianapolis, Indiana:

Gentlemen.—By request of Mayor Shank and the Board of Public Works, I herewith submit report showing progress made on question of determining plans for the sanitary disposal of sewage by the city of Indianapolis.

During the latter part of August of 1910, Dr. Woods, City Health Officer, and myself, by request and with the approval of the Honorable Boards of Public Works and Public Health visited several cities for the purpose of making observations and investigations of the problem of the disposal of sewage. Every city has its peculiar and distinctive sewage disposal problem. The method of disposal of sewage in one city might not be feasible in another. There are certain principles, however, that must be observed in all disposal works, no matter where they are located.

There are the following methods for the disposal of sewage in the cities we have visited.

1. Disposal by dilution.
2. Disposal by screening and straining.
3. Disposal by sedimentation.
4. Disposal by chemical precipitation.
5. Disposal by chemical disinfection
6. Septic tanks, sand filtration beds, contact beds and sprinkling filter beds.

Columbus, Ohio.—This was the first city we visited. The similarity between this city and our own is very striking. Before the installation of the disposal works, this city poured its sewage into a river somewhat larger than White River. The disposal works were first operated November, 1908. Two years were spent in making investigations and experiments before the system was adopted. The works consist of a pumping station, primary settling tanks, secondary settling tanks, sprinkling filter beds and settling basins, which received the effluent from the sprinkling filter beds. The effluent is finally discharged into the Scioto River. The sludge is pumped from the settling tanks into the river whenever freshets occur. The plant is disposing of about 20,000,000 gallons of sewage daily.

Washington.—The sewage of the city of Washington reaches a very efficient pumping station where it is first screened and then pumped five miles down the Potomac River into which it is discharged. Great dilution occurs. It was remarkable that there was practically no odor at this station, though the quantity of sewage was enormous. This station was of particular interest to us because the sewage of our city must be pumped to any kind of disposal works that the city may install.

Baltimore.—One of the most interesting observations we made was at Baltimore. This city had the vast work of laying public sewers and installing a sewage disposal plant. The work has been and is yet directly under the supervision of the State Sewerage Commission. The problem was taken up by this commission seven years ago Much time and money were expended in making investigations and experiments. The Chief Engineer, Mr. Hendrick, visited England and the continent of Europe to observe and study methods of sewage disposal employed in these countries. The construction of the Baltimore plant was begun in 1907 and has recently been completed. The works consist of a power plant, settling tanks, automatc screens and twelve acres of sprinkling filter beds, and hypochlorite tanks which are to be used when it seems to be necessary. A sand sludge bed is also provided. This plant, as was stated, is still in process of construction, and was a most valuable object lesson to us.

The Plant and Land Food Company, of Baltimore, proposes to dispose of sewage by a process of filtration through coke and coal, and further treatment of sludge to recover its fertilizing values. No city has installed a plant built by this company.

Reading, Pennsylvania.—At Reading, the sewage disposal plant consists of a pumping station, a large septic tank, settling tanks, sprinkling filter beds, and settling basins. The effluent is discharged into a small stream. The sludge is deposited on low ground about the works. The plant has a capacity of 5,000,000 gallons. This plant was constructed by a contractor and operated by him for a period of five years. The city now operates the plant. The septic tank was of decided interest to us. A revolving screen known as the Reading Screen is installed in the pumping station.

Philadelphia.—The problem of sewage disposal at Philadelphia has been studied for the past three years. Mr. George Stearns, Director of Public Works, and Mr. George Webster, Chief Engineer of Philadelphia, visited some of the principal cities of England, Belgium, Holland, Germany and France to study the methods employed in these countries. These gentlemen also visited the various cities of this country to observe what had been done. Upon the recommendation of these officials a testing station was built. Various methods were tried, and as a result, a disposal works consisting of a pumping station, two Imhoff tanks, sedimentation tanks and sprinkling filter, a final sedimentation basin and a sludge tank are now about to be completed. The plant will receive about 2,000,000 gallons of sewage daily. The effluent flows into a small stream, which empties into the Delaware River.

Plainfield, New Jersey.—Plainfield is a small city, but its disposal works are most interesting. They consisted originally of sand filters which were abandoned some time ago, and were replaced by contact beds. The plant now consists of screens at the intake, septic tanks, and a series of contact beds. The effluent is poured into a creek, the sludge is deposited on low ground. A change in the system is contemplated.

Mount Vernon, New York.—The plant at this place has been in operation somewhat more than a year. It consists of a pumping station, screens, septic tanks, sprinkling filters and sludge tanks. A tank for chemical disinfection was provided but is not used. The effluent is poured into a tidal river. There are ventilating towers which are unique, but are not used at the present time. The septic tanks were covered and the filter beds also. The latter with glass cover. The sprinkling filters are fed by an overhead system. The sludge is finally deposited in trenches. The capacity is 3,000,000 gallons daily.

New York.—The problem of sewage disposal is being studied in New York City by the Metropolitan Sewerage Commission Some of the boroughs are giving the question much attention

Worcester, Massachusetts.—The disposal plant at this place is most interesting. In 1890, the chemical precipitation system was adopted and is still in use. Lime is the precipitant. Settling basins were and are still employed. In 1898 a sludge pressing plant was built and fourteen acres of sand filter beds were constructed. At the present time there are seventy-five acres of sand filtering surface. The sewage carries large quantities of trade wastes from foundries, wire mills and tanneries. All the sewage is passed through a grit chamber. The city is at the present time making experiments with an Imhoff tank and sprinkling filter bed. The sludge is deposited on low lands.

Boston.—We were particularly interested in the experiments that were begun nine years ago by the Massachusetts Institute of Technology. The experimental station consists of a distributing tank, septic tanks, sprinkling filters, sand filters, sedimentation tanks, and a Dibdin slate bed. Much of the sewage of Boston passes through a pumping station. A mechanical screen is operated here.

Providence, R. I.—This plant has been in operation several years. It consists of a pumping station, settling tanks, sludge presses and treatment by hypochlorite. The raw sewage is treated with hypochlorite. Lime precipitation was formerly used but was given up because the effluent was not sufficently purified. The Shell Fish Commission requires a relatively pure effluent. The effluent is discharged into the Providence River. The trade wastes from woolen mills complicate the problem of disposal very much. The shell fish beds have been extended four miles up the river toward the plant in the past year. This is due to the use of hypochlorite. The sludge is taken out fourteen miles on the river and deposited. Professor Phelps of the Massachusetts Institute of Technology has an experimental station. His experiments are not completed.

Lawrence, Massachusetts.—The experimental station at Lawrence, Mass., was established in 1887. A variety of methods have been tested at this station, and several are now in operation on a small scale. The sand filter has been used more than twenty years, and is still giving excellent results.

Toronto, Canada.—The city of Toronto took up the problem of sewage disposal several years ago. The city engineer, Mr. Rust, visited England on two occasions to study the methods employed there. A plant consisting of a power house and twenty-four modified Dartmond tanks will be in operation in a short time. The capacity of the plant is 40,000,000 gallons. The effluent will be discharged through a conduit about 3,000 feet out in the bay. The sludge will be deposited on low ground.

Chicago.—We visited the sewage testing sation of the Sanitary District of Chicago. This station is under the supervision of Mr. Langdon Pearse who has made a study of sewage disposal both in this country and abroad. The quantity of sewage used for the experiments at this stage is about 200,000 gallons daily. The station consists of septic tanks, settling tanks and Imhoff tank, a modified Dartmond tank, sprinkling filters and the final sludge tank. The effluent from this station is poured into the lake.

A large pumping station receives about 55,000,000 gallons daily. There are screens in the intake. The sewage is pumped into the river. No raw sewage is poured into the lake. The drainage is receiving almost the maximum quantity of sewage which can safely be poured into it, and the problem of some other method of disposal must be solved.

About thirty days ago, I visited several Western cities and investigated a number of sewage disposal plants, among the most interesting of which was an electrolytic process of sewage purification, at Santa Monica, California. This plant is located under the intersection of one of the streets. Here the raw sewage of the city is treated by electrolysis. This plant was completed in 1908 and seems to be giving excellent satisfaction. It is our purpose to install a similar plant for experimental purposes.

I also visited a new plant at Moosejaw, Canada. This plant is a reproduction of one of a number of English plants, consisting of a series of settling basins and contact filters. One of the distinctive features of this plant is a new mechanical distributor. A new garbage incinerator has just been installed on the site of the sewage disposal works, it being the intention to incinerate the sludge from the sewage along with the garbage. This experiment will be watched with interest by us as this is one of our difficult problems

The matter of the final disposition of sludge has never been satisfactorily settled in any of the large disposal works

It is the city's intention to begin immediately on the erection of a testing station, the Board of Public Works having requested an appropriation of $10,000.00 for this purpose. The same has been recommended to the council by the City Controller.

At a meeting with the council it was unanimously agreed to pass the same.

For six months past, we have had three testing stations established on our main trunk line sewers, where hourly samples, for each twenty-four hour day, have been taken, and the same tested in our Laboratory, which has been fully equipped for this work, the object being to find the strongest sewage in order to determine the proper location for our proposed testing station. This work has been completed and the location determined upon.

After a careful study of our sewerage system we have determined that the feasible thing for Indianapolis is to construct one central plant for our disposal works. As our entire water shed is to the southwest, we find the property known as "Sellers Farm" to be the logical location for said works. A complete topographical survey has been made of Sellers Farm and we find the ground admirably adapted for the purpose.

We are now preparing to take a census of our factories to determine the kind and amount of the different trade wastes which we think will materially assist us in determining a number of things desirable to know for the development of our plans.

As this is a large proposition, probably one of the most important the city of Indianapolis has ever undertaken, we propose to exhaust every means to secure all the knowledge possible as to the best methods for the disposal of our sewage in a satisfactory and sanitary manner.

We are of the opinion we should be given an extension of time until July 15, 1913, fully satisfied at the expiration of that period of time we will be able to present a plan to your honorable body which will meet with your approval.

Trusting we may be able to receive the required extension of time, and that this report will meet with your approval, and assuring you this adminsitration is in earnest in this matter, I remain,

Yours truly,

H. W. Klausmann,
City Civil Engineer.

Approved July 12, 1912.
C. A. Schrader,
Charles L. Hutchinson,
E. J. O'Reilly,
Board of Public Works.

After consideration it was

Ordered: The report of Mr. H. W. Klausmann, city engineer of Indianapolis, is received and shall be spread of record, and the request that a further extension of time until July 15, 1913, be given, being reasonable and just, the request is herewith granted, and it is further ordered that a report shall be made of progress to be received by the State Board of Health at its July meeting, 1913.

Indianapolis, June 20, 1912.

Indiana State Board of Health, Indianapolis, Ind.:

Gentlemen.—Having been elected Professor and Head of the Department of Preventive Medicine in the University of Texas, I hereby tender my resignation as Superintendent of the Division of Bacteriology of the Laboratory of Hygiene, to take effect August 31, 1912.

In taking this step permit me to make two statements. First, the offer of the position came as a complete surprise to me, inasmuch as I did not know that such a department had been created in the University of Texas. The advancement both in salary and in position seemed too great to be refused.

It is with a feeling of real regret, however, that I sever my connection with the Laboratory of this Board. My assistants in the Laboratory have shown a loyalty and a singleness of purpose in their work that have made our association a genuine pleasure, and my relations with the members of this Board have been the most cordial. My four years of work here have, therefore, been delightful to me in every way. Allow me to extend to you, both individually and as a body, my sincere thanks for the numerous courtesies shown me.

Respectfully submitted,

J. P. Simonds,
Superintendent Division of Bacteriology.

After consideration the resignation of Dr. Simonds was accepted and the following resolution adopted:

RESOLUTION OF REGRET THAT THE STATE BOARD OF HEALTH OF INDIANA RECEIVES THE RESIGNATION OF DR. J. P. SIMONDS.

During the three years that Dr. J. P. Simonds has been the State Bacteriologist his work has been of such sterling worth that he has endeared himself to the physicians of Indiana and the members of the State Board of Health. Through his untiring effort the Bacteriological Laboratory has reached a high plane of efficiency, and now it is with regret that we, the members of the State Board of Health, accept his resignation, felling that he has discharged his duty to this Board in a most exemplary manner. We feel that the State of Indiana meets with a distinct loss in accepting the resignation of Dr. Simonds, but must meet it because of the fact that the doctor has discharged his duty in such a superior manner that he has merited the advancement tendered him, and the Indiana State Board of Health can not stand in the way of such well-earned promotion. We feel that Dr. Simonds will continue to advance in his profession and that the citizens of the State of Texas will gain a state official, a professional gentleman and a citizen who has been of vast benefit to the State of Indiana. It is with the sincerest regret that we accept the resignation of Dr. Simonds.

Dr. Tucker announced that a meeting of the Executive Committee of the Lake Michigan Sanitary Association was called for Wednesday, July 17, at Chicago. He, being a member of the Executive Committee and it being advantageous that the State of Indiana be represented, it was

Ordered: That Dr. F. A. Tucker, president of the State Board of Health, should attend the meeting of the Executive Committee of the Lake Michigan Sanitary Association, Wednesday, July 17, in Chicago, to represent the State Board of Health, his expenses to be paid out of the general appropriations of the State Board.

Moved by Dr. Hicks, seconded by Dr. Boyers, that a committee of four be appointed by the President, the Secretary to be one of the same, and that the duty of said committee shall be to map out such legislation as it deems necessary to present to the Sixty-eighth General Assembly, and report the same to the State Board of Health at a special or its next regular meeting.

Unanimously carried.

The President appointed Drs. Hicks, Boyers, King and Hurty.

PETITION CONCERNING SCHOOLHOUSE AT SHELBURN.

SHELBURN, INDIANA, July 8, 1912.

To the Honorable State Board of Health, Indianapolis, Indiana:

Gentlemen.—Whereas, Your Honorable Board on April 12, 1912, did condemn and prohibit from further use as schoolrooms the basement rooms of the West Side Schoolhouse, Shelburn, Indiana, as unsanitary; and

Whereas, The undersigned Board of Trustees of the School Town of Shelburn, Indiana, did agree and concur in said finding and ruling, likewise believing these rooms to be in such condition as to fail to conserve the best interest of the children required to use said rooms for school purposes; and

Whereas, This said Board, in compliance with the said ruling, did endeavor to the utmost of its ability to find suitable rooms elsewhere; and

Whereas, This said Board is unable to build new rooms, because the said school town is already in debt to the full legal limit, as provided by our state laws, said Board did endeavor to rent rooms suitable for such purposes; and

Whereas, This said Board finds that there are no rooms available for rent in said town except an abandoned church building; and

Whereas, Said church building was built in 1872 and is a frame building situated immediately adjacent to the right of way of the Chicago and Eastern Illinois Railroad and the Terre Haute, Indianapolis and Eastern Traction Company; and

Whereas, Said church building would require an expenditure of $325.00 to fit the same up in a half way respectable condition, an expenditure of $206.00 a year for rent of said building and two adjacent lots for playground, and an extra janitor hire of $70.00; totaling in all $601.00 for the two rooms for one year's teaching; and

Whereas, After this said Board paid the outstanding bills there remained to us from the June apportionment and is now on hands but $281.21 in our special fund; and

Whereas, There are now dwelling within said school town but 24 students in our high school and that next year this said board expects to transfer these students to another school corporation, and

Whereas, The closing of said high school will give us ample room to care for the grade pupils of said school town,

Now, Therefore, This said Board respectfully prays your Honorable Board to suspend the condemnation of the basement rooms of the West Side Schoolhouse of the said school town for one year, and that this said Board be permitted to use said basement rooms for school purposes for the school year of 1912-1913.

C. C. HALL, President,
F. J. FRIST, Treasurer,
JAMES B. MAPLE, Secretary,
Board of Trustees of the School Town of Shelburn, Ind.

All the above facts are true and I believe that the above request should be granted.

Richard Park,
Superintendent of Schools, Sullivan County, Indiana.

After consideration of the above petition, it was

Ordered: Condemnation of the basement rooms of the West Side Schoolhouse in the town of Shelburn is extended to June 1, 1913.

MUNCIE SCHOOLHOUSE PETITION.

Muncie, Indiana, June 21, 1912.

State Board of Health:

Gentlemen.—Again referring to the condemnation of the Muncie high school building, official notice of which has been served upon us both by letter and by posting of the proclamation on the building, we beg to remind your honorable body that we are within about two months of the opening of school in September and that arrangements have not yet been made for the accommodation of the high school students. Any seeming delay on our part has been caused by delay on the part of township officials to give a definite and final reply to our proposition for the erection of a joint high school building. As you will see such delay has been for reasons not under our control.

In view of these facts and of the further fact that we are charged with the responsibility of providing accommodations for the high school students for the coming school year, we submit for your consideration the following proposition, upon which we have agreed:

1. We will abandon entirely the further use of the basement of the present high school building for school purpose.
2. We will limit the attendance in the high school to actual residents of the city, thereby reducing the number in attendance to not exceed 450 students.
3. We will run the fan continually during school sessions, thereby insuring proper ventilation in all rooms used.
4. We will retint in light colors the study rooms and the darker recitation rooms, improving the lighting to that extent.

If these changes will remedy defects pointed out in the present building and any others which you may specifically name to the extent that it may be temporarily used for school purposes, please advise us to that effect by Tuesday, June 25th.

In case, in your judgment, such a course would not be permissible, please advise us at once, making any suggestion you may have as to available places for accommodating the high school that would more nearly meet all statutory requirements as to sanitation, etc., and would be satisfactory to the health officials.

Respectfully submitted,

Glen F. Rose, President,
R. Milton Retherford, Treasurer,
H. W. Winans, Secretary.

The Secretary reported he had communicated with Dr. H. A. Cowing, county health commissioner of Delaware County, residing at Muncie, in regard to said petition. Dr. Cowing in his letter of reply said.

"I indorse the petition of the school trustees of Muncie, provided:

"(1) That the necessary steps be taken by said school board for the erection of a high school building next year.

"(2) That the overcrowding of the third floor and the consequent inability to conduct fire drills which existed last year not be repeated."

The Secretary further reported that he had communicated with the city board of health and had received a letter indorsing and recommending the granting of the request of the board of school trustees.

After discussion the following order was adopted:

Ordered: The request of the board of school trustees of Muncie, Indiana, that the condemnation of the schoolhouse at that point be extended one year is herewith granted, provided:

1. That the necessary steps be taken by said school board for the erection of a high school building in 1913.
2. That the overcrowding of the third floor and consequent inability of fire drills which existed last year be not repeated.
3. That the further use of the basement for school purposes be abandoned.
4. That the ventilating fans be run continuously during school sessions, to insure proper ventilation.
5. That the study rooms be retinted in light neutral colors, and the darker recitation rooms have the light improved by light tinting of walls.

RESOLUTION OF MINISTERIAL COUNCIL.

This is to Certify, That the following resolution was passed by the Seventy-fifth Annual Council of the Protestant Episcopal Church of the Diocese of Indianapolis on the 23d day of May, 1912:

"Whereas, An effort is being made by the Board of Health of the State of Indiana to secure the passage of an act making effective the provision of the present law forbidding the marriage of persons afflicted with any transmissible disease; and

"Whereas, We believe that the enforcement of that law would tend to prevent much of the misery and affliction due to the marriage of persons physically unfit for marriage, Therefore be it

"Resolved, That we, the clergy and laity of the Protestant Episcopal Church in the Diocese of Indianapolis, do heartily approve the principle involved in such a law, and do express the hope that the efforts now being made to secure such limitation of the right to marry will prevail.

"Resolved, further, That a copy of this resolution be sent to the President of the State Board of Health and to the Governor of the State of Indiana."

Attest: **William W. Hammond,**
Secretary of the Council.

The Secretary was directed to acknowledge receipt of the above resolution and to thank the Council of the Protestant Episcopal Church of the Diocese of Indianapolis for its words of encouragement and confidence.

ELWOOD SCHOOLHOUSE PETITION.

ELWOOD, IND., June 3, 1912.

State Board of Health, Indianapolis, Ind.:

Gentlemen.—Some short time ago, Schoolhouse No. 3, in Pipecreek Township, Madison County, was by the Board condemned, as unsanitary, and the trustee given notice that he was prohibited from using the same for school purposes after June 1, 1912. Our board and trustee promptly met, and went over the situation and we find the following conditions:

First. This schoolhouse is a brick building, one room, one story, slate covered house, in fair condition.

Second. One-half mile East and one-half mile north from its location is another one-story, one-room, brick schoolhouse, in a much more defective and unsanitary condition than the schoolhouse condemned.

Third. The schoolhouse condemned is attended by about forty pupils. The other schoolhouse is attended by about fifteen to twenty pupils.

Fourth. At the halfway point between these two houses, is a fine location for a schoolhouse, with drainage near at hand, so that a basement eight to ten feet deep could be well drained, and an ideal place for a school building.

Fifth. The board and the trustee unanimously decided, or were of the unanimous opinion, that it would best serve these communities by building a modern two-room schoolhouse at this halfway point.

Sixth. To this proposition of the board an opposition has arisen in one of the districts, which the board and trustee believes can be removed and overcome by a year's delay in the erection of the house.

Seventh. The time between this and the commencement of school in September, is too short to condemn a new site, educate the people out of their opposition, and build this building.

Eighth. The board and trustee are of the opinion that a year's delay with an opportunity to talk the matter over with the patrons will remove opposition, will give this community what it should have, to wit, one building instead of two, and that at an ideal location.

Wherefore, the undersigned board and trustee of Pipecreek Township, Madison County, pray your honorable body to give such directions for

repairs and changes in the present schoolhouse, in said district No. 3, which if made, will remove the ban against the same for the coming term of school.

Respectfully submitted,

W. A. FAUST,
Trustee of Pipecreek Township.

CHAS. HARVEY,
B. F. FESLER,
ELMER E. CARTER,
Advisers of Board.

After consideration of the above petition it was

Ordered: The extension requested in above petition is herewith granted, the same being extended to June 1, 1913.

DELEGATES TO MEETINGS.

Ordered: All members of the State Board of Health, namely, Drs. F. A. Tucker, T. Henry Davis, J. R. Hicks, James S. Boyers, J. N. Hurty, are herewith appointed delegates to attend the annual meeting of the American Public Health Association at Washington, D. C., September 18, 19, 20, and also to attend the annual meeting of the Conference of State and Provincial Boards of Health of North America, September 21; also to attend the Fifteenth International Congress on Hygiene and Demography at Washington, D. C., September 23 to 28 inclusive. It shall be the duty of the said members to represent the State Board of Health at the meetings above mentioned and their expenses shall be paid out of the general funds of the Board.

Ordered: Dr. Wm. Shimer is appointed a delegate to represent the State Laboratory of Hygiene at the meeting of the American Public Health Association and the Fifteenth International Congres on Hygiene and Demography as above set forth. The expenses of the said delegate, Dr. Will Shimer, to be paid out of the appropriation for the Laboratory of Hygiene.

Ordered: That Mr. H. E. Barnard shall represent the Pure Food and Drug Department of the State Board of Health at the annual meeting of the American Public Health Association and the meeting of the Fifteenth International Congress on Hygiene and Demography on the dates above stated. His expenses to be paid out of the funds appropriated for enforcing the pure food and drug law and the support of the pure food and drug laboratory.

Ordered: That Dr. William F. King, assistant Secretary may attend the annual meeting of the American Public Health Association and the Fifteenth International Congress on Hygiene and Demography as above set forth, he to help install, manage, and explain the exhibit of the State Board of Health, and to perform such other duties as the Secretary might direct. His expenses to be paid out of the general fund of the State Board.

Ordered: After discussion by the Secretary, Mr. John Owens may be appointed to attend the annual meeting of the American Public Health Association and the Fifteenth International Congress on Hygiene and Demography, to arrange, install, explain and handle the exhibit of the State Board of Health. His expenses to be paid out of the general appropriation of the Board.

Sanitary survey of Schoolhouse No. 13, Paoli Township, Orange County Indiana, by S. F. Teaford, County Health Commissioner.

Site.—Located on west side of public highway part uncleared land, part sod, part red clay, about one-fourth acre in size. Drainage toward schoolhouse and public highway. One unused cistern on grounds.

Building.—Frame structure one story high: roof shingle and in good shape; some of weather-boarding torn off. Size of building 36½ feet by 22 1-3 feet by 11 2-3 feet. Solid stone foundation.

Interior.—Walls and ceiling plastered and papered. Wainscot 34 inches high around the entire wall. Floor poplar lumber, very unclean and open in many places. Six windows, 3 on the north side, 3 on south side; size 75 inches by 35 inches; six lights; sash 34 inches from floor and 31 inches from ceiling. Entrance one single door in east end of house, no platform at door. Two panels broken out of door. Blackboard across west end of room. Flue in center of west end of house. Room heated from wood stove in center of room.

Twenty-one double desks, very unsanitary; six single desks almost new; two recitation benches, one teacher's desk, one water jar with faucet attached. Water, given to pupils in individual cups, is obtained from a neighboring spring. Number pupils enrolled is 45.

Outhouses.—Are built of rough lumber and very unsanitary. No walks on grounds. One wood shed for housing wood.

I would recommend this building be condemned on account of condition of grounds and condition of building. Also it is overcrowded.

After consideration of the above sanitary survey, Schoolhouse No. 13, Paoli Township, Orange County, was condemned and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that Schoolhouse No. 13, Paoli Township, Orange County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Schoolhouse No. 13, Paoli Township, Orange County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1913, and if any township trustee, or city or town school trustee, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Schoolhouse No. 7, Greenfield Township, Orange County, Indiana, by S. F. Teaford, M. D.

Site.—Contains about one-half acre of ground situated on the north side of the public highway, is of red clay soil with no sod covering same and gets very muddy in rainy weather. Ground slopes toward building and a greater part of drainage is toward building. Building is of frame structure built in an L shape, one story structure with stone pillar foundation. Size of main building is 38½ feet x 22 1-6 feet; 10-foot ceiling. The L addition is 19x13 feet with 10 foot ceiling.

Interior.—Ceiled room with flue in center of main building to which attaches two small wood stoves that heats building. Floor is of rough plank and very open, and in the most unsanitary condition I have ever seen. Ceiling was never treated to a coat of paint, and appeared to be smoked black. Eight windows in room, three on north side and five on south side. Size of four are 71x34 inches and the others are 62x34 inches. Twenty-five double desks, one recitation, one teacher's desk, in a very unsanitary condition all of them. Pupils are seated facing the east, blackboard across the east of room. Entrance in the south end by a double door with panels knocked out of both doors. Number of pupils attending is 39.

Outhouses.—Two on north side of lot of rough frame structure and very unsanitary, but do not drain toward building. No wood shed or walks.

I would recommend this building be condemned on account condition of grounds and unsanitary condition of building and arrangement of building. Strictly speaking there is nothing right.

After consideration of the above sanitary survey, Schoolhouse No. 7, in Greenfield Township, Orange County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that Schoolhouse No. 7 in Greenfield Township, Orange County, Indiana is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Schoolhouse No. 7 in Greenfield Township, Orange County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1913, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Schoolhouse No. 4, French Lick Township, Orange County, Indiana, by S. F. Teaford, M. D.:

Site.—Grounds contain about one-fourth acre of land, very abrupt and rolling, no level land on grounds; surrounded by woods and some distance from public highway and near a small water course, and drains toward the waterway.

Building.—Constructed on hillside one side of foundation is on the ground and the other is five feet high. Foundation is of stone pillars; some are creeling. Building is of frame structure weather-boarded and shingle roof; part of boards are torn off. Size of building is 30x20 feet, the long distance being north and south. Entrance in the south end.

Interior of Building.—Plastered walls, wainscot 34 inches high; six windows, three on east and three on west, 62x35 inches, four feet from ceiling; six light sash. Plastering torn off in many places. No paper, plastering very rough. Floor of pine and open in many places. Room heated by one small wood stove in center of room, with flue built from ceiling. Twenty single desks, fairly good shape; six double desks old and worn; blackboard across north end the entire length of building; one teachers desk and one recitation bench. No water fountain; water obtained from neighboring spring. No blinds to windows. Building very rickety, when walking across the floor. Number of pupils attending, 23.

Outhouses.—They are of rough lumber structure and unsanitary. One woodshed near the building in a very unsanitary condition.

I would recommend that this school building be condemned on account of condition of grounds and building.

After consideration of the above sanitary survey, Schoolhouse No. 4, in French Lick Township, Orange County, was condemned, and the following proclamation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Schoolhouse No. 4, in French Lick Township, Orange County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Schoolhouse No. 4, in French Lick Township, Orange County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1913, and if any township trustee, or city or town school trustee, or teacher, authorizes or uses said schoolhouse for school purposes after said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Schoolhouse No. 4, Orangeville Township. Orange County, Indiana, by S. F. Teaford, County Health Commissioner:

Site.—School ground very rough and broken. Contains about one-half acre of ground on the north side of public highway. A two-story frame structure with solid stone foundation which at front of building is about 5 feet high sloping to the ground to the rear of foundation. School ground slopes toward the front of building and public highway. No basement to building. Size of building is 44½ feet x 22½ feet, foundation 34 inches high at front.

Interior.—Size, 39 2-3 feet x 21 1-3 feet x 10 feet. Second story same size, used for lodge purposes. This part entered from hallway five feet wide on north end of room. Plastered walls and ceiling; wainscot 35 inches high around the entire room; part of ceiling torn off. Windows, size, 70x35 inches. Four on east side and four on west side, 35 inches from floor. Entrance in the south end by a stepway forty inches high. Room heated by one coal stove situated in the center of room; flue in the center of north end with long stove pipe leading to flue. Evidence of smoking very bad. Floor of dressed pine lumber in very good shape. Twenty-two double desks in very good shape, one teacher's desk and one recitation bench; blackboard in the north end of building. Water given to pupils from water jar with faucet attached, obtained from neighboring well and given to pupils in individual cups. Number of pupils attending school, 19.

Outhouses.—Are built of rough lumber and very unsanitary. One woodshed in very good condition.

I would recommend this building be condemned on account of condition of grounds and building.

After consideration of the above sanitary survey Schoolhouse No. 4 in Orangeville Township, Orange County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that Schoolhouse No. 4, in Orangeville Township, Orange County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Schoolhouse No. 4, in Orangeville Township, Orange County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1913, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Schoolhouse No. 7, Northwest Township, Orange County, Indiana, by S. F. Teaford, County Health Commissioner:

Site.—Grounds contain about three-fourths acre, situated on east of the public highway, which leads north and south; ground slopes toward public highway and schoolhouse, and is very rolling and broken. Drainage toward highway and schoolhouse. Some grass on plat and some shade trees. Around the house is red clay soil with no grass, which makes a very muddy ground in wet weather.

Building.—Size 30x22 feet, the long way being north and south. No windows in the north end, two in the south end, and three on the west side and three on the east side. Entrance at the south center of south end—small platform at entrance surrounded with red clay. Foundation of rough limestone, part of it fallen down and very much out of line; no basement. The building is a one-story frame structure, shingle roof and weather-boarded. A part of weather-boards are torn from house. Roof leak; shows evidence of being patched many times. Walls are out of line. No walks upon grounds. Building is heated by small wood stove, which sits in middle of building, and flue is supported from the upper joist of building.

Interior of Building.—One room size 29 feet 2 inches x 21 feet 2 inches x 9 feet 4 inches. Plastered ceiling and walls; plastering torn off in many places and much evidence of leaks on ceiling. Wainscot around room 30 inches from floor. Floor of pine and open in many places. Door in bad shape, with one panel burst. Twenty double seated desks in room in very bad shape and unclean. No window blinds and no evidence of being used during schooltime.

Window openings, 44x34 inches; six-light sash, many lights broken out. Two outhouses on north side of grounds, one for males and one for females, built of rough lumber and very unsanitary. No walks leading to either of these. No water supply on grounds. Water is obtained from a neighboring spring some distance away and is given to the pupils in individual cups from a water jar with flowing faucet attached.

Number of children registered is 21.

This building should be condemned on account of its dangerous condition liable to collapse any time.

After consideration of the above sanitary survey Schoolhouse No. 7, Northwest Township, Orange County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that Schoolhouse No. 7, North West Township, Orange County, Indiana is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Schoolhouse No. 7, North West Township, Orange County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1913, and if any township trustee, or city or town school trustees, or teacher, authorizes or uses said schoolhouse for school purposes after said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Sanitary survey of Creston School, in District No. 12, West Creek Township, Lake County, May 21, 1912, by T. W. Oberlin, County Health Commissioner:

Site.—Low, wet, poorly drained, grounds muddy. One plank for walk.

Building.—One story frame, fair repair. One hole in roof. No spouting. Hole in front of foundation pinched out 3 x 4 feet, evidently by accident, which gives only ventilation under the building.

Interior.—One room, entered by two doors from cloakroom, across front of building. Room 27 x 30 x 12 feet. Six windows; three on each side of room. Wood stove in front center of room. No ventilation. Average attendance 25 pupils of generally vigorous appearance.

Basement.—None.

Water Supply.—Drilled well, tin cup on pump but teacher says children have individual cups.

Closets.—Outside, no walks, boys' foul. Sex separate.

General Conditions.—Floors dirty, dry sweeping. Has been scrubbed twice during year.

Recommendations.—Condemn.

After consideration of the above sanitary survey, the Creston School, in District No. 12, West Creek Township, Lake County, was condemned, and the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Creston School, in District No. 12, West Creek Township, Lake County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders:That said schoolhouse, known as the Creston School, in District No. 12, West Creek Township, Lake County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1912, and if any township trustee, or city or town school trustee, or teacher, authorizes or uses said schoolhouse for school purposes after the said date, he or she or they shall be prosecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

Petition to the State Board of Health, from Perry Township, Marion County:

To the State Board of Health, Indianapolis, Ind.:

We, the undersigned resident taxpayers and legal voters of Perry Township, Marion County, Indiana, would represent and show to your Honorable Board, that the building located in said township and commonly known as the Southport School Building, was duly contracted for and erected by the Trustee of Perry School Township, in said county and State since the 21st day of April, 1911.

That said building consists of nine schoolrooms, auditorium and stage, office of trustee, large hall on each floor with stairway east and west from first to second floor, and from first floor to basement, two small rest rooms on second floor, one agricultural room on third floor, and basement containing manual training room, room for teaching domestic science, gymnasium, two toilet rooms, and a furnace room; that it was erected for public school purposes and is being so used at the present time by large numbers of children residing in said Township.

That there has been installed in said building and is now being used therein, a certain heating and ventilating system which your petitioners are informed does not comply with the provisions of "an act entitled an act to protect the health and lives of school children and increase their efficiency, by providing healthful schoolhouses, and requiring the teaching of hygiene," approved March 1, 1911, in that said heating and ventilating system does not take air from outside the building and, after heating, introduce the same into each of the schoolrooms in said building at a minimum rate of thirty (30) cubic feet per minute for each pupil, regardless of outside atmospheric conditions. That there is provided in the basement of said school building a room for domestic science and also one for a gymnasium and an additional room for manuual training; that there has been placed in the said basement and the same is now being used by the children attending school at such schoolhouse, a certain system of water closets and urinals which is not efficient and sanitary in every particular in that the same is not ventilated and the odor from said system so vitiates the air that it is a menace to the lives and health of said school children and all other persons having to be and remain continuously for any considerable period of time in such school building.

Wherefore, we respectfully request your Honorable Board to scientifically test such heating and ventilating plant, and investigate said system of water-closets and urinals, under the authority of Sec. 7594 Burn's R. S. 1908, and if found as herein stated, that the same be condemned and ordered forthwith removed.

And for the doing without delay by your Honorable Board, of the things as herein requested, your petitioners will ever pray.

Respectfully submitted,

Witness our hands this 9th day of May, 1912.

Charles Weelburg,
E. E. Arnold,
E. F. Sanders,
Edw. Lichgill,
H A. Hensley,
John L. Wetright,

Henry Gurdts,
Bert Tex,
Robert Borner,
J. M. Davis,
Chas. Ryker.

After consideration of the above petition it was

Ordered: That when school opens in the fall, as soon as convenient, the Secretary shall make an inspection of said schoolhouse and report his findings, with recommendations, to the State Board of Health.

Report of Inspection of the Warner Gear Company Plant, Muncie, Indiana, June 15, 1912, by Wm. F. King.

This inspection was made at the request of Dr. Hugh A. Cowing, county health commissioner of Delaware County, and Mr. Johnson, president of the Warner Gear Company. The inspection had to do especially with the ventilation of the factory building and was made for the purpose of recommending to the company such alternations and changes as would insure the employes an adequate supply of fresh air with freedom from dust and other insanitary or unhealthful conditions.

The present system of ventilation is by means of a large blower fan taking air from above the level of the factory building through a large inlet shaft. In the winter time this air in driven over heating coils to the various parts of the factory. In the summer time the ventilation is largely through windows. In addition to the blower fan, two exhaust fans opening through the roof exhaust the faul air from the building. After a thorough survey of the factory building the following alternations and changes are recommended: There should be an additional number (at least six) of exhaust fans properly placed in the roof at various points in order to thoroughly exhaust the foul air from every part of the factory. In this connection it should be stated that numerous gravity foul air stacks open through the roof in practically all parts of the factory building. Many of these gravity stacks are below the level of the highest part of the roof and consequently are not effective under all weather conditions. It is recommended that all these gravity stacks be extended above the highest line of the roof and that each of these stacks be equipped with a ventilator or cowl, in order to prevent any down draught in the stacks to interfere with their efficiency. Toilet rooms should have better ventilation provided, either by means of exhaust fans or by sufficient number of gravity stacks constructed and equipped as above described.

Cloakrooms should be provided so that coats and overcoats can be kept in a separate room, thoroughly ventilated, and apart from the working rooms.

In the grinding department of the factory, canopies should be provided over the machines and emery stones where grinding is done, and these canopies should connect with exhaust fans in such way as to thoroughly remove all the dust of grinding from the air supply of the grinding rooms.

Cuspidors should be provided and expectoration upon floors should be absolutely prohibited.

The present drinking fountains should be abolished and sanitary bubbling fountains established, so that the common drinking cup will no longer be used.

All the above recommendations are necessary in the interest of good health and physical efficiency among the employes of this institution.

No action was taken on above inspection of the Warner Gear Company plant, because the company in a letter to the Board had promised to make all the changes recommended by Dr. King.

DR. SHIMER APPOINTED.

The Secretary announced he had appointed Dr. Will Shimer Superintendent of the Laboratory of Hygiene to succeed Dr. J. P. Simonds, resigned, and requested the confirmation of the Board. Confirmation was unanimously passed.

There being no further business, the board adjourned.

REGULAR QUARTERLY MEETING FOR THE FOURTH FISCAL AND THE THIRD STATISTICAL QUARTER, BOTH ENDING SEPTEMBER 30, 1912.

OCTOBER 11, 1912.

Called to order at 2:00 p. m.

Present: Drs. Tucker, Boyers, Davis, Hurty.

The President announced the meeting was for the fiscal and the statistical quarter, both ending September 30, 1912.

Minutes of the last regular meeting read and approved in each individual and separate part and as a whole.

REPORT OF SECRETARY FOR THE QUARTER ENDING SEPTEMBER 30, 1912.

This is the fourth fiscal and third statistical quarter for the year. The quarter has been notable because of the number of public meetings on hygiene which have been held in it. First, was the annual meeting of the American Public Health Association, September 18th, 19th, and 20th, followed by the annual meeting of the Conference of State and Provincial Boards of Health on September 21, and this followed by the Fifteenth International Congress on Hygiene and Demography, September 23d to 28th, all held in Washington, D. C. As the Secretary was President of the American Public Health Association this year, it seems *apropos* that a rather full account be given of the meeting. The sections lasted three days, beginning September 18th. Over 600 members and delegates registered in attendance. The American Public

Health Association is divided into five sections each having its chairman, secretary and executive committee. Regular section meetings are held every morning. Papers of a general character are read, business of the Association is transacted and then adjournment taken to attend the sections. The evening of the first day is given up to a public reception. The local authorities at this meeting deliver their speeches of welcome, and the President delivers his annual address. This meetings is always followed by a President's reception. At the gathering this year, the Secretary had the honor to stand in line with retired Surgeon-General Sternberg, present Surgeon-General Torney, Dr. Harvey W. Wiley, Dr. Woods Hutchinson and other men of eminence. The President's address, besides dealing with the affairs of the society as usual, was devoted to the relationship of eugenics to the public health.

CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH.

President William Woodward called the Conference to order promptly at 9:30 a. m., Saturday, September 21. There were no papers but subjects were discussed. A report on Railway Sanitation was read by Dr. Enion Williams, health commissioner of the State of Virginia. This report was thoroughly discussed, the conclusion being, that railway hygiene is yet far from what it should be; railway cars and stations are not kept sufficienty clean; the common drinking cup or glass still exists in many States; and ventilation is usually bad in the winter time. The Conference resolved that another year it would take some action in regard to the water-closets and the distribution of excreta along the railway beds.

Sleeping car or Pullman sanitation was thoroughly discussed, and the Pullman Company was commended for the general cleanliness of its cars, because of the introduction of facilities for washing the teeth and mouth, for the sheets which cover the blankets and because of the rigid disinfection practiced. Dr. T. C. Crowder, Sanitary Superintendent of the Pullman Company, was present and was invited to discuss the subject. He told of the efforts of the Pullman Company to meet all sanitary requirements, and called attention to the fact that a Pullman car could be likened to a hotel on wheels. It moves at the rate of 40 or 50 miles an hour, and if people are to travel at rates which they can afford, they must stand crowding, such as does not exist in any hotel.

The principal subject of discussion was over the rules governing the transportation of dead bodies. After long discussion and full consideration, it was concluded that the time had come when health boards should take the stand that a disinfected body was a disinfected body and could be transported anywhere at any time no matter what the disease which caused the death. The Conference will, therefore, recommend to state boards of health a new set of rules governing transporation of the dead, which will permit, if the corpse is thoroughly disinfected (embalmed), its transportation and inspection at any time.

FIFTEENTH INTERNATIONAL CONGRESS ON HYGIENE AND DEMOGRAPHY.

Over 3,000 delegates registered in attendance upon this Congress, which was certainly the most important convocation relating to public health ever held in the United States. All but one or two of the United States were represented, and thirty foreign countries. The Congress was divided into nine sections, covering almost every known phase of hygiene and demography. Among the eminent persons present were: Dr. Jacques Bertillon, Sir Thomas Oliver from England, Sir George McCray from Scotland, Dr. Leffler from Germany, he who worked out the bacteriology of the diphtheria bacillus; Prof. W. T. Sedwick, Dr. Montizambert of Canada. The empire of Russia was represented by Gen. Unterberger, physician to his Imperial Highness, the Emporer. Spain was represented by Dr. Lltorente, the physician of the royal househould of the King of Spain. Germany was represented by over 50 delegates and France by 20.

The Congress was opened Monday, September 23d, by President William Taft, who delivered an address in which he plainly and clearly announced his adherence to the belief that hygiene and sanitary science and the prevention of diseases was probably the most important question before the world today. At this opening meeting responses were made to the welcome of the President by delegates especially appointed by their several countries. In the evening of Monday, the nine sections convened, and for the remainder of the week, with the exception of temporary adjournments for entertainments, were in constant session. President Taft gave a reception to the Congress on the afternoon of September 23d.

A prominent feature of the Congress was the exhibit. This was housed in a special, temporary building constructed near the Washington Monument. The exhibit was divided into nine groups with four sub-groups. The building was in the form of a maltese cross and covered about two acres of ground. Quite every phase of hygiene and sanitary science and preventive medicine was represented. Two lecture halls were constantly going. These halls were provided with stereopticons capable of showing moving pictures as well as still slides. During the whole week every 30 minutes, commencing at 9 o'clock each morning with an intermission of two hours at noon, was occupied with a lecture, most of them illustrated. Thousands of people visited the exhibit and thousands listened to the lectures.

The exhibit of the State Board of Health was entered for five groups, namely, Group 1, Vital Statistics and Demography; Group 3, Hygiene of Infancy and Childhood; Group 5, Housing; Group 7, Communicable Diseases; and Group 8, State and Municipal Hygiene. The writer was frequently told that the Indiana exhibit was exceedingly creditable and showed splendid hygiene advancement for the State. One feature of the exhibit was a fly five feet long suspended from the ceiling with a human skeleton astride of the same. The skeleton bore in his hand a banner upon which was inscribed the word "Disease." This attracted a great deal of attention and is calculated to forward the fight against disease-carrying flies. Several allegorical cartoons pertaining to questions concerning disease prevention were praised and commended by the committee appointed by the Congress to report upon the exhibit. In the exhibit pertaining to school hygiene a special feature was made of the famous Gary high school. The completeness and perfectness of this school building was fully presented and was a source of very great deal of comment.

The exhibit of the Pure Food and Drug and Water Departments was also highly commended. This exhibit represented the work of these departments since their beginning. Our statistical exhibit also attracted attention, especially the series of maps of Indiana showing the distribution of the different contagious and infectious diseases.

It is unnecessary to review the programs of the different sections or even the program of the general association for the same in fullest detail will be found in the reports of the association. However, it is worth while to report that this year marked the establishing of two new sections, namely, the engineering section and the sociological section of the American Public Health Association. Like other sections these had their programs and dealt with those subjects which come under their observation.

President Taft gave a reception to the Association which was largely attended. The municipal authorities of Washington also tendered a reception which was given in the new National Museum. As President, I was repeatedly congratulated upon the fact that this had been the most successful of all the meetings ever held by the Association, and that new life seemed to have been taken on.

VISITS OF THE SECRETARY.

The following visits were made by the Secretary during the quarter:

Jeffersonville—August 12th. This visit was made to attend a special meeting called by the Superintendent of the Indiana Reformatory to consider the matter of making a methodical psychological study of the inmates. Governor Marshall, also the superintendents of most of the institutions of the State were in attendance; also Dr. Hunt from New York, an expert in penology. The superintendent gave a dinner to a large company upon the occasion, and himself delivered an address upon the necessity of considering the intellectual and moral nature of prisoners before assigning them to a task, and before their treatment was entered upon. Prof. KleinSmid had been selected by the superintendent as assistant superintendent, to make the psychological studies determined upon. The Secretary believes this is a very important forward movement in the care and treatment of criminals in this State.

Brownstown—August 27th. This visit was made to address the Jackson County Teachers' Institute. Two addresses were made, one upon the subject of school hygiene, and the other upon the relation of eugenics to preventive medicine. The meetings of the institute were held in the circuit court room in the new court house at Brownstown. Large audiences were present at both lectures, and a vote of thanks and confidence in the State Board of Health was offered.

Richmond—September 4th. On this date I visited Richmond to attend the Wayne County Medical Society and to read a paper, also to confer with the authorities upon local health matters. My paper entitled, "Eugenics and the Science of Medicine," was read and received by the society.

New Market—September 6th. By invitation of the local authorities, I went to New Market upon this date to make an inspection of the town and to make what recommendations I could, and in the evening delivered a public lecture. The visit was successful in all particulars. I met with the local health officer, Dr. C. H. Walden, also the members of the town board after an inspection of the town had been made. New Market had been visited by a severe outbreak of typhoid fever, which has cost the township on account of the indigents who were treated, over $1,500. A citizen of New Market, named Hall, had been to Kentucky and upon return was taken ill. The disease proved to be typhoid fever. The dejecta from the patient were deposited in an open and dilapidated outhouse, despite the directions of the physician and health officer. Five members of the family acquired the disease and two died. From this nucleus the disease spread over the town, and of course, the explanation is plain. I believe the lecture and the directions given upon conference with the town authorities will protect this town hereafter against another such visitation.

The proclamations of condemnation of schoolhouses passed at the last regular meeting, were forwarded in due form and all of the orders of the State Board of Health have been executed.

VITAL STATISTICS.

The vital statistics for the quarter, as usually given in this report are set forth in the following tables:

SMALLPOX.

	Cases.	Deaths.	Counties Invaded.
July,. 1911	44	0	11
July, 1912	30	0	13
August, 1911	31	0	13
August, 1912	11	0	5
September, 1911	13	0	5
September, 1912	4	0	4
Total, 1911	88	0	29
Total, 1912	45	0	22

TYPHOID FEVER.

	Cases.	Deaths.	Counties Invaded.
July, 1911	296	72	59
July, 1912	245	32	55
August, 1911	524	102	92
August, 1912	418	71	75
September, 1911	642	91	72
September, 1912	643	93	77
Total, 1911	1,462	265	223
Total, 1912	1,306	196	207

The following circular was sent to newspapers September 20, 1912:

TUBERCULOSIS SUNDAY.

Sunday October 27th has been designated by the National Society for the Prevention of Tuberculosis as *Tuberculosis Sunday*. This is the third year a *National Tuberculosis Day*, has been announced.

Tuberculosis is not only an agency producing misery, suffering, sorrow and death; but it also brings with it crime, pauperism, insanity, immorality and irreligion.

Tuberculosis is preventable. The disease is *not hereditary*, as was believed for a long time and still so believed by many.

Careful scientific investigation discovers the disease is always acquired. It is now fully proven that if the child of a tuberculosis mother is taken away so it will not receive the microbes of infection from her, and if normal living be secured to it, consumption will not appear. Indeed, more than this is found out by scientific investigation, for we now know if a person with consumption, not too far advanced, will live the normal and natural life, he can get well.

The disease, then, is brought upon us because we so constantly live abnormally and unnaturally. It is not a visitation for sin, it is simply the result of living in opposition to the laws of life. A person could with a nail dig out one of his eyes. This would not be the resultant of sin; it would simply be the loss of an eye because the person would not protect it instead of destroying it. So it is with consumption. It comes because we dig away at our lungs and blood with lots of bad air. To push a nail into the eye is quite the same as pushing foul air into the lungs. There is this difference—the nail treatment only destroys the eye, the body living on. In the case of consumption the bad air treatment destroys the lungs, and as these organs are essential to life the body dies when they are destroyed.

The having or not having of consumption, and of all other diseases as well, is merely a matter of choice on our part. We have the nasty typhoid simply because we are so nasty as to eat nasty human excreta. So soon as we will take care of all our body wastes, all of the time, in a sanitary way, then typhoid will not plague us.

For *Tuberculosis Sunday* the State Board of Health has prepared a syllabus or abstract of the facts and lessons of the disease and will send them to whoever will apply for them.

Pastors who will preach upon the subject on the day named, will find in this syllabus facts and suggestions of value.

Ten per cent. of *all deaths* among church members are caused by tuberculosis. Of the 33,000,000 communicants in churches in the United States over 52,000 die each year from the preventable tuberculosis. Our advice to church members, and all others also, is—don't acquire tuberculosis and die. Rather live according to the physical laws of your well-being and thus live out the allotted time of life in strength and full possession of all your faculties. This is one way to worship God and enjoy him forever.

The syllabus or outline spoken of in the newspaper notice follows:

Outline of Address on Tuberculosis, Prepared for Use on Tuberculosis Day, October 27, 1912, by the Indiana State Board of Health.

This circular is sent out in the hope that the information herein given may be found helpful in preparing sermons for the observance of *Tuberculosis Sunday.* It is urged that on that day something may be said in every church in Indiana of the nature, cause and prevention of tuberculosis, the dread disease that claims more lives than any other. The crusade against tuberculosis should commend itself to all churches as a vital field for practical Christian effort.

TUBERCULOSIS IS A COMMUNICABLE, PREVENTABLE AND CURABLE DISEASE.

I. Introduction.

In Indiana the daily loss of life from consumption is	12
In Indiana the annual loss of life from consumption is	4,500
In the United States the daily loss of life from consumption is	500
In the United States the annual loss of life from consumption is	180,000
In the world the daily loss of life from consumption is	5,000
In the world the annual loss of life from consumption is	1,800,000
During the four years of the Civil War the total loss of life was	205,070
Every four years consumption destroys in the United States alone more than	700,000
During one hundred years in the United States yellow fever killed 100,000 people.	
Consumption kills 180,000 people in the United States every year.	
The annual economic loss from consumption in Indiana every year is	$14,000,000
The annual loss in the United States is	330,000,000
The annual loss in the world is	3,330,000,000

WHO PAYS THIS ANNUAL BILL?

STATE OF INDIANA, A. D. 1909

The People of Indiana, U. S. A.

To Preventable Consumption, Dr.

I. To Cost in Lives and Devastated Homes.

Item 1.	Number of Consumption deaths	4,479
Item 2.	Number of homes invaded by Consumption.	3,866
Item 3.	Number of homes broken up by loss of Father or Mother	2,180
Item 4.	Number of dead Mothers in the productive age period 18 to 40	1,286
Item 5.	Number of dead Fathers in the productive age period 18 to 40	994
Item 6.	Orphans made Fatherless and Motherless under age of 12	2,366
Item 7.	Number of young people killed in the age period of 15 to 25	938

II. To Cost in Almighty Dollars.

Item 1.	Money loss in educating the 1,128 young people who were killed by Consumption between the ages of 5 to 25 in 1909 at the cost of $200.00 each	$225,600
Item 2.	Loss in wages for one year of sickness of each of the 3,301 who were killed in the working period of 15 to 60 at $10.00 per week	1,716,520
Item 3.	Estimating one-half (2,240) of the killed as valuable to society, and valuing each at $5,000, one-half the statutory value, the loss is	11,200,000
Item 4.	Cost of sickness, nursing, doctors, medicines, average sickness one year of the 3,301 workers at $5.00 per week	858,260
	Total Cost to Indiana in the year 1909...	$14,000,380

HOW LONG WILL THE PEOPLE STAND THIS LOSS?

II. What Tuberculosis is.

Tuberculosis is a disease caused by the growth in the body of the tubercle bacillus or germ. Tuberculosis was first proven to be a contagious, preventable disease by Robert Koch of Berlin, when he discovered the tubercle bacillus in 1882. The daily expectoration of a consumptive may contain millions of these minute germs. The germ in its growth destroys tissues and gives off poisons which cause the well known symptoms of the disease. Tuberculosis invades all tissues and occurs in all parts of the body, as lungs, kidneys, brain, bones, etc.

III. Predisposing Causes.

In the Person:—

1. Weakened physical condition.
2. Alcoholism.
3. Disease—pneumonia, grippe, measles, typhoid, etc.

In the Environment:—

1. Bad housing; overwork.
2. Bad food; lack of strength and vitality.
3. Bad air; poor ventilation.

IV. Immediate Causes.

Tuberculosis is always acquired, never inherited. The commonest method of infection is by the air we breathe. Dried germs from sputum of consumptives float in the air and are breathed into the lungs. Tuberculosis may also be acquired by direct contact, as in kissing, or by swallowing the germs with infected milk and other foods that have been infected.

V. Commonest Early Symptoms.

1. Cough that persists a month or longer.
2. Progressive loss of weight.
3. Fever, usually in the afternoon.
4. Night sweats.
5. Progressive loss of strength, a general "run down" and tired feeling.

These symptoms should lead one to consult a physician at once.

VI. Tuberculosis in Children.

Tuberculosis is not inherited. One may inherit a weak constitution which is especially susceptible to tuberculosis infection. Tuberculosis does "run in families" and is a house disease due to direct infection from one member of the family to another. The danger is from children playing on infected floors, using utensils and being exposed constantly to those who have the disease.

VII. How Tuberculosis May Be Prevented.

1. By teaching the consumptive to destroy his sputum.
2. By teaching people not to sleep, work or live in poorly ventilated rooms.
3. By teaching the consumptive how not to infect his family or neighbor.
4. By discovering the disease in its early stages and curing the patient, thus removing the source of infection to others.
5. By educating the community as to the nature of the disease—that it is communicable, preventable and curable.
6. By educating people to keep their bodies in good physical condition so as to enable them to resist the germs.
7. By advocating fresh air, out door life, sunshine, rest, no overwork, wholesome food, temperate habits, good houses, sanitary schoolbuildings and right living.

VIII. How Tuberculosis May Be Treated and Cured.

1. Early discovery of the disease is necessary for cure. The best method of cure is sanatorium treatment.
2. The essentials in the cure are sunshine, fresh air, good food, freedom from worry, rest, and cleanliness.
3. Avoid patent medicines and whiskey cures. They do not cure and are always dangerous.
4. No danger from a careful consumptive who is cleanly in habits and destroys his sputum.

IX. How You Can Help.

1. *Teachers:* By instructing pupils as to the nature, prevention, and cure of tuberculosis; teaching children simple rules of health, how to breathe deeply, etc.; keeping class rooms well ventilated.
2. *Parents:* By keeping the home clean and well ventilated; teaching children to sleep with the windows open, to eat proper and nourishing food, to observe the simple laws of health.
3. *Children:* By keeping clean; by not putting anything in the mouth excepting food; by living as much as possible in the fresh air and sunshine; by eating only wholesome, nourishing food.
4. *Workers:* By insisting on the working places being well ventilated; by avoiding dust, dampness and darkness; by avoiding overwork.
5. *Everyone:* By taking care of your own health; by stopping indiscriminate spitting; by joining in the movement to stamp out tuberculosis in your community.

The following facts concerning tuberculosis in Indiana are taken from the statistics of the State Board of Health for the year 1909:

Tuberculosis Deaths by Months in Indiana:

January	389	July	349
February	374	August	353
March	451	September	322
April	449	October	327
May	418	November	305
June	410	December	332

From these figures it will be seen that tuberculosis goes on with its deadly work without cessation or remission throughout the entire year. Time and season have no deterring influence upon its deadly march. Tuberculosis is the one universal infection which, like an opposing army, hangs constantly upon the flanks of human progress.

Tuberculosis Deaths By Ages in Indiana:—

Under 1 year	179	20-25 years	575
1-2 years	87	25-30 years	567
2-3 years	36	30-35 years	410
3-4 years	24	35-40 years	355
4-5 years	15	40-45 years	312
5-10 years	67	45-50 years	290
10-15 years	93	50-55 years	218
15-20 years	373		

From these figures it will be seen that at about 15 years of age the death rate from tuberculosis is increased enormously. Just at the time when boys and girls have completed the course in the graded schools and are looking forward to useful lives in their chosen work, or are entering colleges and universities to further equip themselves for useful lives, the victims of this dread disease begin to increase, so that between the ages of 15 and 25 years, more than 40 per cent. of all deaths from all causes are from tuberculosis.

In this connection it may be stated that fully 75 per cent. of the schoolhouses in Indiana are wholly unfit for school purposes, being badly lighted, poorly ventilated and insanitary in the extreme. Most of these schoolhouses are hotbeds of consumption. Children who are compelled to go to school in such buildings are subjected to constant and continuous air starvation by which their vitality is lowered and their resisting power is lessened so that they become an easy prey to the germs of consumption. It is not to be wondered at, therefore, that immediately following the ages of school life the death rate from consumption increases alarmingly as shown by the figures given above.

X. Climate in Tuberculosis.

Pure air, not climate, is the important factor in cure of tuberculosis. It amounts to thoughtless and willful cruelty to send indigent tuberculosis persons to "some other place" for the climate alone. In most cases this simply dooms such persons to paupers' graves. Climate helps tuberculosis sick in but very small degree anyway and that only in "suspected" cases. Climate is not a saving factor even with those well-to-do except in the earliest incipiency of the disease and is of absolutely no saving value to the indigent even at the time of the earliest known presence of the disease with them.

XI. What is Being Done Against Tuberculosis in Indiana.

The Indiana State Tuberculosis Hospital near Rockville in Parke County was opened for patients April 1, 1911. The hospital has a capacity for 125 patients to be apportioned among the different counties of the state. Incipent cases with pulmonary tuberculosis only are received. Rates:—Indigent cases are first provided for and are treated free, after which pay patients are accepted at a uniform rate of $9.00 per week. Superintendent, Dr. H. B.

Leavitt, Rockville, Indiana. All correspondence should be addressed to the Superintendent.

Indiana Dispensaries:

Evansville Anti-tuberculosis Clinic. Physician in charge, Dr. James Y. Welborn assisted by seventeen others.

Indianapolis Tuberculosis Clinic conducted by the city of Indianapolis. Physician in charge, Dr. Albert Henry.

Indiana Associations:

Indiana State Association for the Prevention of Tuberculosis.

Vanderburgh County Anti-tuberculosis Society, Evansville. President, Dr. James Y. Welborn; Secretary, Dr. Charles W. Hartloff.

Ft. Wayne Anti-tuberculosis Society, Ft. Wayne. President, Dr. Eric Crull; Secretary, Miss Italia Evans.

Lafayette Society for the Prevention of Tuberculosis, Lafayette. President, Prof. Severance Burrage; Secretary, Chas. Ebel.

Delaware County Anti-Tuberculosis Society, Muncie. President, Mrs. Elmer Whitely; Secretary, Miss Luella Anderson.

Wayne County Anti-Tuberculosis Society, Richmond. Secretary, Dr. S. E. Bond.

South Bend Anti-Tuberculosis League, South Bend. President, Mrs. Harry D. Johnson; Secretary, Mrs. Mary S. Robinson.

Tuberculosis Committee of the Society for Organizing Charity, Terre Haute. President, L. J. Cox; Secretary, Miss Rhoda M. Welding.

Indiana Sanatoria:

State Tuberculosis Hospital, Rockville, Supt., H. B. Leavitt.

Rockwood Tuberculosis Sanatorium, Danville, Medical Director, Dr. Thomas J. Beasley.

Boehne Farm, Evansville. Supt., Dr. James Y. Welborn.

St. Rochus Hospital, Ft. Wayne. Application should be made to the Sister Superior.

Frankfort Tuberculosis Sanatorium, Frankfort. Supt., Dr. Chas. Chittick.

Flower Mission Pavilion for Incurables, City Hospital, Indianapolis. Supt., Dr. J. A. Freeland.

Indianapolis Tuberculosis Colony, Indianapolis. Supt., Dr. Albert Henry.

St. Joseph County Hospital Tuberculosis Pavilion, South Bend. Supt., Dr. C. B. Crumpacker.

South Bend Anti-Tuberculosis Camp, South Bend. Supt., Dr. Walter H. Baker.

The State Board of Health, Indianapolis, carries on an active campaign against tuberculosis, distributing literature and creating public interest by means of lectures, exhibitions, popular meetings, etc. A laboratory is maintained wherein examinations of suptum for diagnosis are made free.

Address State Board of Health, Indianapolis.

GREAT LAKES INTERNATIONAL PURE WATER ASSOCIATION.

The Secretary read a letter from Dr. C. E. Ford, president of the Great Lakes International Pure Water Association from Cleveland, which requested the State Board of Health to appoint a delegate to attend a meeting of the Association to be held in Cleveland, October 23 and 24, 1912. After consideration, it was

Ordered: Mr. H. E. Barnard shall represent the Indiana State Board of Health at the Great Lakes International Pure Water Association to be held in Cleveland, October 23d and 24th, his expenses to be paid out of the Laboratory Fund, and he to make a report of the meeting. Further, the Secretary shall inform the president of said association of the appointment of Mr. Barnard as delegate.

Ordered: Dr. F. A. Tucker shall act as delegate to represent the State Board of Health at the National Association of Milk Standards and National Milk Association, which meets in Chicago November 10th and 12th, his expenses to be paid out of the funds of the Board.

The following report was received and ordered spread of record:

Report of sanitary inspection of Winona Lake, by J. P. Simonds:

INDIANAPOLIS, August 1, 1911.

On April 19, 1911, in company with Dr. W. L. Hines, Health Commissioner of Kosciusko County, Mr. Jonathan Rigdon, Mr. R. H. Willis, Mr. J. O. Frank, Mr. F. A. Burtsfield, Mr. J. H. Criswell, and Mr. W. G. Fluegel, I made an investigation of the sanitary condition at Winona Lake. The work had to be done in a steady downpour of rain and could not be as thorough as could be wished. We were able, however, to secure enough information to justify certain recommendations. The results of the investigation may be presented under three heads: first, the milk supply; second, the water supply; and third, the system of sewage disposal.

THE MILK SUPPLY.

The concession to sell milk on the park grounds is granted to one man. He has no cows of his own but buys all his milk from three or four farmers. He supplies these farmers with ordinary large milk cans in which they bring the milk to the dairy "within an hour after it is drawn."

The house in which the milk is bottled belongs to the Winona Lake Corporation, and goes with the concession to sell milk on the grounds. It is situated outside the park, about seventy-five yards from the east border. The building is on very low ground. On the slope some forty to sixty feet above and to the south of the building are a surface privy and a dwelling. Surface drainage is from these houses directly toward the milk-house. About thirty feet north of the milk-house is a small barn with two large manure piles adjacent.

The milk-house is constructed of wood with a cement floor. The windows and doors are screened, but there are numerous knotholes and cracks in the walls that will admit flies in season. The walls are low and the room is unceiled. The floor, walks, tables, etc., were only fairly clean.

The empty, returned milk bottles are washed on the inside with a brush, rinsed with hot water and inverted on a drain board until used. That the cleaning is not adequate is shown by the accompanying bottle which was obtained from one of the gentlemen who accompanied me on the tour of inspection. He stated that this bottle had been rinsed in cold water after pouring out the milk delivered in it. The bottles are filled by a machine which fills four bottles at a time. This machine is washed after each using and rinsed with hot water. The large milk cans on being emptied, are washed, rinsed with hot water and then inverted over a jet of steam for four or five minutes or "until the next can has been washed." In other words, there is really no effective sterilization of the milk utensils after using. The dairyman probably does as well as he can in his present location.

THE WATER SUPPLY.

It was stated by Dr. Hines that the supply of water from the gravel pit north of the Pennsylvania Railroad had been abandoned and that all water is now obtained from deep driven wells. Serious doubt was expressed as to the ability of these wells to supply sufficient water during the crowded summer season. If this should occur there appear to be four possible additional sources of supply:

1. They can again use water from the gravil pit. It was not possible, on account of the rain, for us to investigate this source of supply. But it has been carefully examined by both Mr. Barnard and Mr. Brewster whose reports have been made to the Board.

2. There are on the grounds a number of springs and two or three flowing artesian wells, the greater part of whose water is wasted. These might be connected with the pumping station in such a way that water which is now wasted could be directed into the general water supply. Water from the artesian wells would undoubtedly be safe. The presence of a number of sewer lines at no great distance from some of these springs would render the probability of their water doubtful. Water from the largest of these springs, called the Studebaker, when inoculated into fermentation tubes, did not cause the formation of gas, and when planted on Endo's medium no red colonies developed. There was no growth in the *closed* arm of the fermentation tube. Hence, there is no indication of any contamination of this spring with sewage at present. However, the possibility of such contamination must be borne in mind.

3. The use of water from two or three shallow dug wells on the grounds. What were said to be two of these wells were examined and were found to be very bad. The water stands in them within 12 to 18 inches of the surface of the ground and is, no doubt, composed chiefly of "seep water" from the lake. There is one septic tank within a hundred and fifty feet of one of these wells and situated between it and the lake.

The gross appearance of the water as it stood in these wells was filthy. Each well had an old, partially rotten wooden cover. There were pieces of wood, and a filthy-looking scum floating on the surface. Fermentation tubes inoculated with this water did not, however, show gas and no red colonies grew on Endo's medium. Hence it is probable that there was no contamination with sewage at the time of the examination.

4. The installing of a sufficient number of deep driven wells to supply the necessary amount of water. This is the only plan that should receive serious consideration. The present water supply, derived from such wells, appears to be of most excellent quality. Two samples—one taken from the tap at the public school, the other from the tap in the Westminster Hotel—produced no gas in dextrose broth and no red colonies on Endo's medium. There was little or no growth in the closed arm of the fermentation tube inoculated with water from the tap in Westminster Hotel.

The water is now pumped into one of two large elevated wooden reservoirs on the east side of the park. Both reservoirs are used in the summer. The trap-door to the unused one was open and English sparrows were building nests inside it. The bottom was covered by several inches of mud and slime.

In the south end of the park there are a number of dug wells fitted with pumps. These supply water to persons who rent the adjacent cottages during the summer. The largest septic tank on the grounds is between these wells and the lake.

THE DISPOSAL OF SEWAGE.

The sewage of the majority of the buildings inside the park is disposed of by means of septic tanks. The effluent from these tanks flows directly into Winona Lake. All but one of these tanks are small. They are constructed in pairs, each measuring from four to six feet in diameter and ranging from two to four feet in depth. The contents of the first tank of each pair was covered with a thick scum; the surface of the second usually showed a few floating particles of solid matter. In most instances the inflow pipe projected a few inches from the upper part of the wall of the tank and the sewage falling on the scum kept it constantly disturbed.

One of these tanks, namely that nearest the Hatfield residence, was examined with some care. This consists of two small circular connecting tanks each approximately four feet in diameter, the contents showing a depth of about two feet. These tanks had recently been cleaned. The scum on the first was broken. The surface of the second showed a considerable amount of floating solid matter and gave off a very foul odor. Sewage from 16 to 20 houses passed through this tank. It is evident that when all these dwellings are occupied this tank will be entirely inadequate to the work put upon it. It would be impossible for sewage to remain in the "putrefaction tank" a sufficient time to allow the necessary putrefactive and liquefying changes to take place. A sample of the contents of the second yielded 20 per cent. gas in dextrose broth, and about one-half the colonies on Endo's differential medium were found to be fecal bacteria, chiefly B. Coli. Hence it is evident that there is very little purification of the sewage in this tank and that the effluent is a dangerous source of pollution of the lake.

With the exception of the large tank, to be mentioned presently, all the septic tanks in the park are similar to the one just described, and those on the "Island", are hopelessly overtaxed. At present each septic tank on the "Island" received the sewage from only one house, or occasionally from two houses. The effluent passes directly into the lake without filtration or other treatment.

The largest septic tank on the grounds receives the sewage from the Westminster Hotel. The crude sewage flows into a large reservoir about ten feet in diameter and six to eight feet in depth. From here it passes into a second tank of similar dimensions. The inflow and outflow pipes from each of these tanks are submerged. The contents of both tanks are covered with a scum, that on the first being quite thick and unbroken. The effluent from the second tank flows into an enclosed area about twenty feet square where it falls over a series of three "terraces." A sample from the last of these "terraces" yielded 25 per cent. gas in dextrose broth, and many of the colonies which grew on Endo's medium were B. Coli. From the last "terrace" the sewage flows through pipes to a third, smaller reservoir some sixty feet away and from this passes directly into the lake. A sample of the contents of this reservoir gave exactly the same results as that from the last "terrace." The buildings in the south end of the park are not connected with the city water supply and therefore have no septic tanks. They are furnished, instead, with outdoor privies. These are of the open surface variety and none that we saw were fly proof.

RECOMMENDATIONS.

1. The location of the milk-house is exceedingly bad. A better building that can be made fly proof should be constructed on higher ground at a safe distance from manure piles and surface privies.

2. While there are several possible sources of drinking water if the present supply proves inadequate during the summer season, there is only one that should be seriously considered, namely, the construction of a sufficient number of deep driven wells to furnish the maximum amount of water known to be needed. The unused elevated reservoir should be thoroughly cleaned and the cover made bird proof before being put in use again. The safety of the water from the springs on the grounds is questionable, because of the presence of sewer lines and septic tanks.

3. The present system of sewage disposal is entirely inadequate and is a source of serious pollution to Winona Lake. The lake water is not used for drinking purposes, but bathing at the regular bathing beach, which is located very near the outflow of a number of these overtaxed and inadequate septic tanks, is neither safe nor cleanly. If the lake is to be protected from pollution the whole plan of sewage disposal should be submitted to a competent sanitary engineer with instructions to devise a system that will render the effluent harmless.

Report of exhibits, by John Owens:

INDIANAPOLIS, October 1, 1912.

Since the first of February, 1912, at which time I took charge of the educational work of the State Board of Health, we have, with our exhibit and health work, visited ten counties as follows: Owen, Greene, Sullivan, Knox, Gibson, Dubois, Spencer, Posey, Vanderburgh and Crawford. In these counties we have used the exhibits in eighteen different cities or towns. Sixty-eight night lectures have been given and we have gotten in touch with not fewer than 37,500 people, exclusive of pupils in the public schools.

During this time we have made medical and dental examination of, and given instruction to, not fewer than 9,000 school children. The total number, therefore, that we have come in touch with in less than five months campaign is not fewer than 46,500 people. In addition to this work I have given lectures in Rockville, Terre Haute, Jasonville and other places, and estimate that not fewer than 50,000 people have come more or less under the direct influence of this work. This is an average of 10,000 per month, exclusive of students in the schools, and an average of about 500 per week of school students. In this work we were assisted by Doctor Simonds, superintendent of the Bacteriological Laboratory, and H. E. Barnard, State Food and Drug Commissioner, and have met with the hearty co-operation on the part of local physicians and dentists.

In addition to this work not fewer than 100 talks have been made to high school pupils, college students and women's clubs. Large amounts of literature on the subject of tuberculosis, the sexual plagues, and swat the fly, have been distributed, and from a large number of these counties we have received requests for return visits, and especially for the child welfare work, to be given in connection with the county institutes.

In all of these cities and towns we have made sanitary surveys, have frequently gone into the question of sewage disposal, examination of the public water supplies and the like. In fact we have made the State Board of Health a clearing house for all questions of sanitation and public health, character of the food supply and such allied subjects as the local conditions would permit of.

This work began February 1, 1912, and with some interruptions covered a period of five months, closing July 1st, 1912.

Sanitary survey of school house No. 2, Southeast Township, Indiana, inspected August 23, 1912, by S. F. Teaford:

Site.—Contains about one-fourth acre of ground practically level and very well drained. Public highway on the south of building 30 feet from building, and branch on north side of building 20 feet from building. The grounds are of gravel consistency and not very apt to get very muddy. School ground is located in a small hollow with large hill on north and on the south of building, which does not admit much sunshine to grounds.

Building.—Frame structure, very old, size 34 feet x 24 feet x 12 feet; one-story structure, no basement. No walks on grounds. Roof, shingle on one side and iron on the other, very open and much evidence of leaking.

Part of weather-boarding torn off. Flue in center of building, supported from joist. Room heated by two small wood stoves with both pipes joining and entering flue by single pipe.

Interior.—Building is entered in center of west end of building closed by a very rugged door with some of the panels out. One-room building with no cloakroom. Size of interior is 33 feet x 23 feet x 12 feet. Walls and ceiling are of lumber and very open; floor of matched pine and open in many places. Room is lighted with three windows on north and three windows on south of building; size 70 inches x 35 inches, six-light sash. Thirteen double and five single desks, one teacher's desk, and one recitation bench, all old and very unsanitary. Blackboard on west end, north and south side of building. Number of children enumerated 15.

Outhouses.—None. I suppose they go to the bush.

Water Supply.—Is obtained from a spring on the grounds, which looks to be very good water. Is kept in water container with faucet attached and given pupils in individual cups.

Remarks.—The location of this building is very unsatisfactory also the building. It should be condemned and time extended until next year for the erection of new building.

After discussion of the above survey of Dr. S. F. Teaford, County Health Commissioner of Orange County, the following proclamation of condemnation was adopted:

PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the Schoolhouse No. 2, in the Southeast Township, Orange County, Indiana, is insanitary, and therefore threatens the health and life of the pupils and interferes with their efficiency; therefore the Indiana State Board of Health, according to the statutes,

Orders: That said Schoolhouse No. 2, in Southeast Township, Orange County, Indiana, is condemned, and shall not be used for school purposes after June 15, 1913, and if any township trustee, or city or town school trustees or teacher, authorizes or uses said schoolhouse for school purposes after said date, he or she or they shall be presecuted as provided in the law.

Any person mutilating or tearing down this proclamation shall be prosecuted.

APPOINTMENT.

The Secretary reported he had conferred with Mr. Barnard, and it was his request that Mr. Allen H. Loyd be appointed assistant chemist in the Food Department of the State Board of Health. The Secretary stated that Mr. Loyd began work in the laboratory June 20 and worked faithfully up to the first of October without pay, that Mr. Loyd has proven himself to be a very competent analyst, and Mr. Barnard believes he is the very man we need in the Food and Drug Labcratory. The Secretary therefore appointed

Mr. Allen H. Loyd as assistant food chemist at a salary of $75 per month, this appointment to begin October 1, 1912.

Ordered: The appointment of Mr. Allen H. Loyd as assistant chemist in the Food and Drug Department is herewith confirmed, he to receive a salary of $75 per month and the same to be paid out of the appropriations for the support of the laboratory.

CIGARETTE SMOKING.

The Secretary reported he had sent out the following circulars to the superintendents of schools in the State of Indiana, that he had done so in accordance with a petition received from several superintendents and upon the support of the State Superintendent of Public Instruction. The Secretary further reported that after the circular had been sent out numerous letters were received from school superintendents in all parts of the State acknowledging receipt of circular and in every instance its import and intent were commended. And he further said that he believed that some good had been done by this circular in the line in which it was directed.

Superintendent of Schools:

Dear Sir.—Cigarette smoking is certainly an evil and the State Board of Health desires to abate it all it possibly can. We ask you therefore to co-operate with us in this work. It is certainly true that cigarette smokers have a lower efficiency than those who do not smoke them. If you will notice carefully you will notice that those boys who smoke cigarettes are not as bright, do not progress as rapidly as those of the same mental grade who do not use this drug. Tobacco is of course a drug. If it did not contain a drug (nicotine) it would not be in demand. It is the soothing effect of this drug that those who are addicted to smoking so much desire. Like the morphine habit, when it is once fastened upon a person it is difficult indeed to throw off. Not only does economy, but the law itself, commands against the use of cigarettes.

Section 1641, First Revised Statutes, provides, "that any boy under sixteen years of age who smokes cigarettes is a delinquent child and can be proceeded against as in manner provided by law for the prosecution of persons charged with misdemeanor, and upon conviction thereof may be released upon probation or may be dealt with by the court in such manner as may appear to be for the best interest of the child." In the Juvenile Court Act such prosecutions may be begun before any justice of the peace and by him certified up to the circuit court of the county. It should be impressed upon the boys that it is not manly, that it is not hygienic to smoke cigarettes. They should be made to understand that it lowers their efficiency, clouds their intellect, makes them more liable to disease, and is contrary to law for a boy under sixteen years of age to use tobacco and establish smoking cigarettes.

We will be glad to hear from you upon this subject.

There being no further business, the board adjourned.

STATISTICAL REPORT, 1912.

This report is for the calendar year 1912. The populations are those of the United States census.

In the following tables the causes of death are arranged according to the International List of Causes of Death which has been adopted by all of the registration States of the country. This international list of causes of death was used by the United States Bureau of the Census in its last statistical compilation of causes of death.

Table 1 is a classification of all deaths, with rates per 100,000 population, classified and arranged according to the international list of causes of death.

Table 2 is a classification of deaths from all causes by months, ages, color, nationality and conjugal conditions.

Table 3 gives deaths from all causes by counties, months, ages, color, nationality and conjugal condition.

Table 4 gives deaths from certain diseases by geographical sections and by counties.

Table 5 gives death rates from certain important causes by counties in geographical sections.

Table 6 gives deaths in cities from important causes for the year 1912.

Table 7 gives death rates by cities from important causes for the year 1912.

Table 8 gives annual death rates for ten years, 1903 to 1912, inclusive, with average of cities of 5,000 population and over, compared with rural and State rates.

Table 9 gives deaths according to occupations by months and ages.

Table 10 gives deaths from tuberculosis (all forms) with rates per 100,000 population, for certain occupations of each sex for the year 1912.

Table 11 gives deaths from poliomyelitis by counties, months, and ages for the year 1912.

Table A gives births by counties, months, color and nationality of parents. (Stillbirths excluded.)

Table B gives births by counties, number of children born to each mother, grouped ages of parents, stillbirths, plurality and illegitimate births.

Table C gives number of births, and rate per 1,000 population, by counties for year 1912.

Table D gives marriages by counties, months, color and nationality.

Table E gives marriages by counties, and grouped ages.

BIRTHS.

The total number of births reported in the State of Indiana during the year 1912 was 57,297, of which number 29,693 were males, and 28,162 females. Of the total males, 29,233 were white and 460 colored. Of the total females, 27,682 were white and 480 colored. In the preceding year, 56,970 births were reported; males, 29,264; females, 27,706. This shows an increase over the preceding year of 327 births. August had the greatest number of births, 5,240, and April the smallest, 4,385. March had the greatest number of deaths, 3,484, and June the smallest, 2,420. The birth (57,297) rate 20.9 exceeds the death (35,771) rate 13.1 per 1,000 population.

The nationality of parents appears as follows: American born fathers, 52,692; American born mothers, 53,699. Foreign born fathers, 4;207; foreign born mothers, 3,652. Nationality not reported, fathers, 398; mothers, 46.

Of the total number of children born to each mother, 16,443 were first; 12,557, second; 9,078, third; 6,307, fourth; 4,314, fifth; 3,074, sixth; 2,122, seventh; 1,451, eighth; 962, ninth; 650, tenth; 344. eleventh; 380, twelfth and over; 173 not reported.

As to the ages of parents, 819 fathers and 6,059 mothers were under 20 years of age. In the age period 50 to 60, 1,204 fathers and 26 mothers; in the age period 60 to 70, 129 fathers; and 70 to 80, 12 fathers.

One thousand seven hundred and fifty-seven still births not included in total number of births and deaths.

The illegitimate births numbered 871, of which 451 were males and 420 females. The plural births numbered 555, of which 557 were males and 559 females. Of the plural births, three were triplets.

MARRIAGES.

Total marriages reported, 29,843. This is an increase of 844 as compared with the previous year. December had the greatest number of marriages, 3,162; and March the smallest number 1,818. The general statistics on Marriages will be found in Tables D. and E.

DEATHS.

Total number of deaths reported in 1912, 35,771; rate 13.1. In the preceding year, 35,231 deaths; rate 13.0. Males numbered 19,198; females, 16,573. White males, numbered 18,590; colored, 603, 2 Chinese, 1 Indian, 1 Syrian, 1 Greek. White females, 16,068; colored, 504, 1 Mexican.

American born, 16,994 males and 15,197 females. Foreign born, 1,959 males, 1,299 females. Not reported, 245 males, 77 females. Single males, 7,594; single females, 5.466. Married males, 8,070; married females, 6,084. Widowed or divorced, males, 3,314; females, 4,981. Conjugal condition not reported, 220 males, 42 females.

The number of deaths with rates for 10 years appear in the following tables:

Year.	*Deaths.*	*Annual Rate.*
1903..................	33,892	13.4
1904..................	37,240	14.0
1905..................	36,502	13.7
1906..................	35,992	13.5
1907..................	36,461	13.4
1908..................	36,224	13.2
1909..................	36,579	13.3
1910..................	36,513	13.5
1911..................	35,231	13.0
1912..................	35,771	13.1

Of the total number of deaths, 5,388 or 15 per cent. of the total number occurred under one year of age, a decrease of .3 per cent. over last year.

In the age period of 1 to 4, 2,142 deaths occurred, making a total loss of children under 5 years of age of 7,530 or 21.0 per cent. of the total deaths, a decrease of .2 per cent. over the preceding year. This is 13.1 per cent of the total births reported and shows no decrease from the preceding year.

In the age period 5 to 19, there were 2,220 deaths or 6.2 per cent. of the total number, a decrease of .4 per cent. over the preceding year. The total loss under 20 years of age is 9,750 or 27.2 per cent. of the total deaths, a decrease of .6 per cent. over the preceding year.

In the age period of 20 to 49, practically the prime of life, there were 8,021 deaths, equal to 22.4 per cent. of the total, a decrease of 1.5 per cent. over the preceding year. There were 470 deaths over 90 years of age, an increase of 1.350 compared with the preceding year.

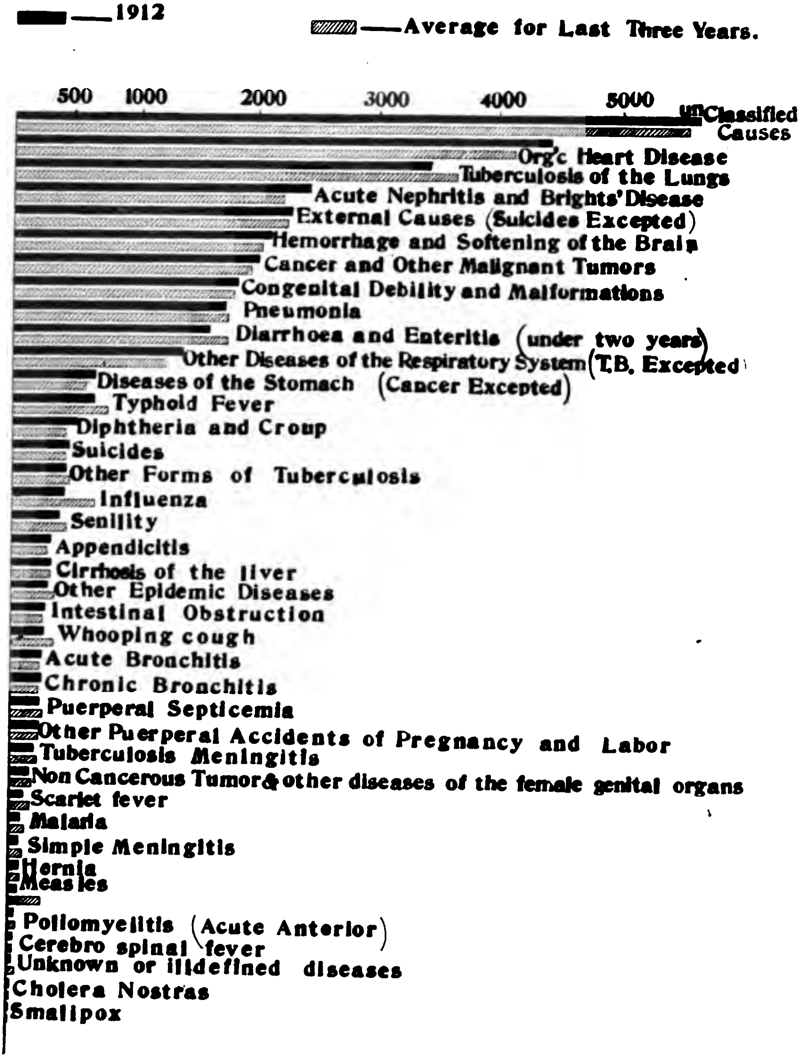
DEATHS FROM ALL CAUSES (ABRIDGED) FOR THE LAST THREE YEARS, WITH AVERAGES.

The following table gives the deaths from all causes for the last three years, with averages for each cause, and Chart No. 1 gives a graphic representation of deaths from all causes for 1912.

DEATHS FROM ALL CAUSES (Abridged).

	1910.	1911.	1912.	Average.
All causes not otherwise sperified	5,568	5,445	5,665	5,559
Organic disease of the heart	3,956	3,972	4,419	4,116
Tuberculosis of the lungs	3,921	3,588	3,419	3,643
Acute nephritis and Brights' disease	2,021	2,210	2,443	2,225
Deaths by external causes (suicides excepted)	2,168	2,292	2,288	2,249
Cerebral hemorrhage and softening of the brain	1,959	2,087	2,111	2,052
Cancer and other malignant tumors	1,872	1,919	2,018	1,936
Congenital debility and malformations	1,798	1,816	1,836	1,817
Pneumonia	1,823	1,710	1,746	1,759
Diarrhoea and enteritis (under two years)	2,049	1,629	1,625	1,768
Other diseases of the respiratory system (tuberculosis excepted)	1,188	1,180	1,388	1,252
Diseases of the stomach (cancer excepted)	547	579	658	595
Typhoid fever	934	736	652	774
Diphtheria and croup	381	374	518	424
Suicides	386	445	458	429
Other forms of tuberculosis	534	438	430	467
Influenza	701	659	420	593
Senility	515	409	385	436
Appendicitis	272	282	316	290
Cirrhosis of the liver	283	329	300	307
Other epidemic diseases	453	291	283	342
Intestinal obstruction	236	249	264	249
Whooping cough	450	320	255	348
Acute bronchitis	247	210	246	234
Chronic bronchitis	217	210	232	219
Puerperal septicemia	229	293	231	251
Other puerperal accidents of pregnancy and labor	221	200	219	213
Tuberculosis meningitis	255	204	190	219
Non cancerous tumor and other diseases of the female genital organs	173	199	150	174
Scarlet fever	205	179	113	166
Malaria	151	124	98	124
Simple meningitis	130	123	82	112
Hernia	75	93	81	83
Measles	462	280	73	272
Poliomyelitis (acute anterior)	53	68	47	56
Cerebro spinal fever	22	26	36	28
Unknown or illdefined diseases	81	68	31	60
Cholera nostras	20	12	15	16
Smallpox	1	3	12	5
Total deaths from all causes	36,513	35,231	35,771	......

DEATHS FROM ALL CAUSES



TUBERCULOSIS.

Havoc Wrought by Tuberculosis in Indiana in 1904-05-06-07-08-09-10-11-1912.

	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.
Total tuberculosis deaths	4,978	4,492	4,456	4,471	4,527	4,479	4,710	4,230	4,048
Male deaths	1,807	1,745	1,675	1,964	2,085	2,112	2,191	2,032	1,910
Female deaths	3,171	2,793	2,771	2,328	2,442	2,367	2,519	2,198	2,138
Mothers, age 18 to 40, prime of life	867	987	917	826	875	1,286	1,412	1,212	1,168
Fathers, age 18 to 40, prime of life	490	315	255	343	383	995	1,040	970	923
Orphans made under 12 years of age	2,703	2,694	2,353	2,340	2,407	2,375	2,490	2,041	2 001
Homes invaded	3,396	3,307	3,283	3,849	4,022	3,866	3,909	3,716	3,500

TUBERCULOSIS, ALL FORMS.

Deaths by Months with Average for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	368	420	419	415	373	411	389	409	399	376	397
February	350	414	407	394	428	425	374	407	376	388	396
March	445	350	461	443	449	437	451	498	424	452	461
April	411	459	426	439	455	446	449	462	401	397	434
May	388	502	391	398	384	412	418	402	370	375	404
June	363	400	361	331	356	372	410	399	361	303	365
July	373	397	361	329	377	357	349	373	374	318	360
August	340	390	355	367	389	314	353	368	339	286	350
September	354	347	306	307	340	341	322	354	267	269	320
October	306	365	326	344	327	330	327	359	306	293	328
November	333	352	326	346	315	344	305	311	303	280	321
December	388	582	353	343	329	338	332	368	310	311	365
Totals	4,414	5,178	4,492	4,456	4,522	4,527	4,479	4,710	4,230	4,048	4,505

TUBERCULOSIS, ALL FORMS.

Deaths by Ages with Average for Last Ten Years.

AGES.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	100	144	108	126	132	152	179	184	139	143	141
1 to 2 years	59	99	35	62	85	36	87	102	72	79	71
2 to 3 years	24	42	26	38	48	30	36	39	33	46	36
3 to 4 years	23	25	18	31	24	21	24	29	25	35	25
4 to 5 years	14	13	11	24	28	15	15	22	11	14	16
5 to 9 years	64	68	63	64	58	55	67	60	64	67	63
10 to 11 years	92	126	97	106	93	100	93	92	81	89	96
15 to 19 years	436	501	449	411	400	460	373	370	339	267	394
20 to 24 years	707	725	697	681	667	609	575	653	529	511	635
25 to 29 years	572	614	574	577	573	532	567	590	520	549	566
30 to 34 years	491	509	464	464	467	432	410	484	415	410	454
35 to 39 years	374	436	419	375	341	356	355	350	379	340	372
40 to 44 years	267	316	273	242	253	312	312	300	317	283	287
45 to 49 years	225	286	245	260	270	259	290	238	216	204	249
50 to 54 years	217	232	222	221	226	227	217	276	244	211	229
55 to 59 years	193	206	153	171	190	225	198	213	191	171	191
60 to 64 years	166	189	165	170	179	200	203	195	176	167	181
65 to 69 years	143	152	165	172	180	202	165	188	186	193	174
70 to 74 years	116	136	122	122	138	162	135	161	151	141	138
75 to 79 years	74	75	72	96	104	92	112	99	89	82	89
80 to 89 years	30	47	34	35	48	48	56	54	49	52	45
90 years and over	2	3		4	3	5	10	7	4	4	4

TUBERCULOSIS ALL FORMS

BY MONTHS

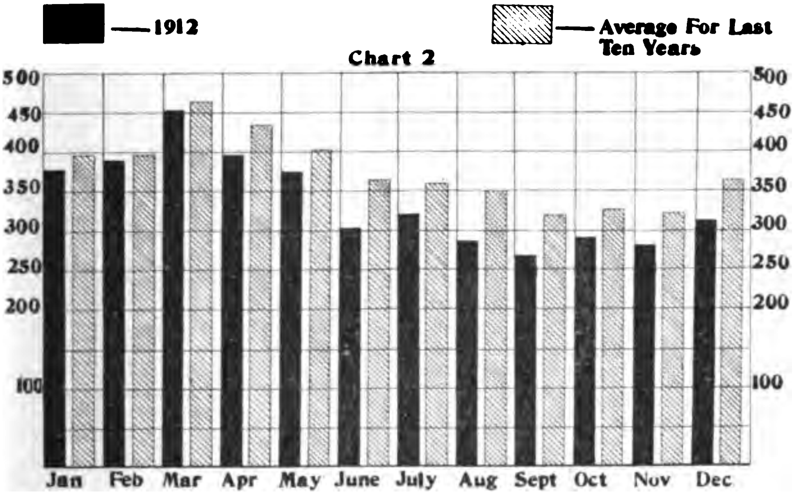


Chart 2

By Age

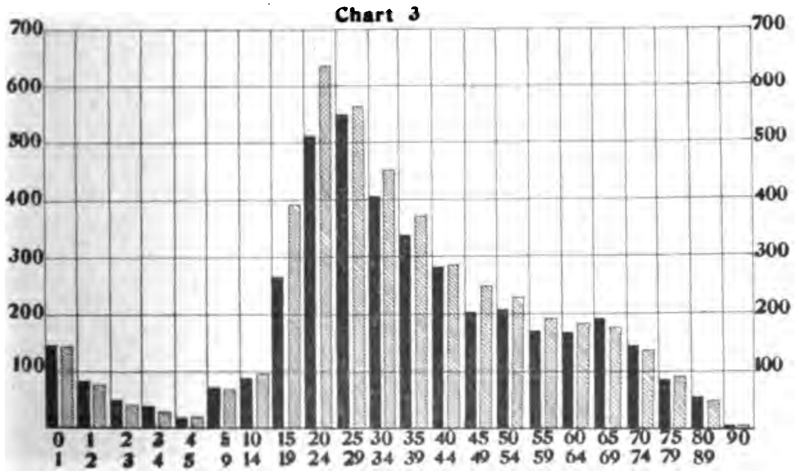


Chart 3

PULMONARY TUBERCULOSIS.

Deaths by Months with Average for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	324	379	395	359	330	358	334	357	340	318	349
February	318	372	379	349	392	363	310	340	320	333	348
March	399	485	421	391	396	380	385	420	369	385	403
April	365	409	380	386	392	379	365	378	331	321	370
May	339	448	346	337	329	347	347	324	306	322	344
June	326	359	330	282	303	318	330	322	310	252	313
July	323	358	310	285	314	290	276	291	300	270	301
August	293	332	308	312	312	257	294	278	283	244	291
September	318	302	263	253	286	278	253	281	208	196	264
October	261	322	266	289	276	275	273	294	244	234	273
November	297	317	287	302	276	293	253	254	256	226	276
December	352	353	313	310	282	287	287	304	258	263	300
Totals	3,951	4,436	3,998	3,854	3,888	3,825	3,706	3,853	3,525	3,364	3,840

PULMONARY TUBERCULOSIS.

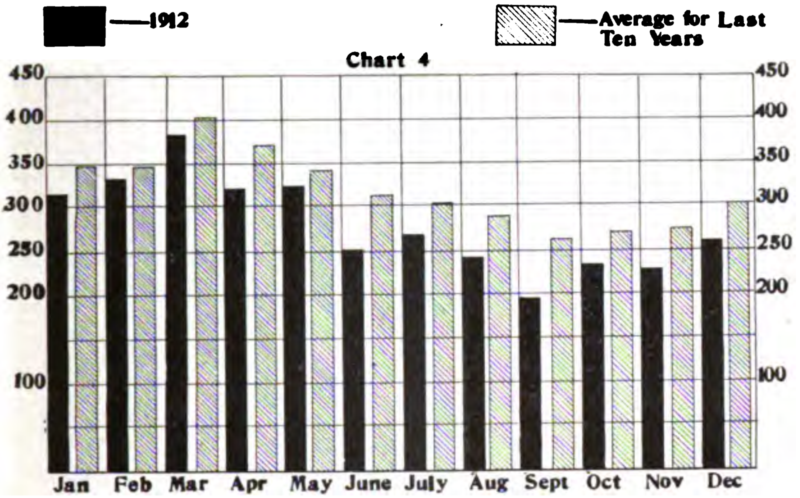
Deaths by Ages with Average for Last Ten Years.

AGES.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	53	72	53	60	63	78	48	63	52	53	59
1 to 2 years	28	48	37	27	31	27	30	33	22	32	31
2 to 3 years	11	23	13	19	19	15	14	13	13	16	15
3 to 4 years	10	14	10	10	6	8	8	9	5	7	8
4 to 5 years	7	9	3	8	10	4	5	9	4	4	6
5 to 9 years	35	32	37	31	29	23	30	24	26	29	29
10 to 14 years	59	101	75	76	66	62	64	62	53	57	67
15 to 19 years	393	457	411	359	356	348	329	317	290	229	348
20 to 24 years	666	687	650	625	623	562	509	578	480	451	583
25 to 29 years	535	582	538	535	517	499	502	520	474	507	520
30 to 34 years	461	486	437	429	430	395	267	431	375	370	408
35 to 39 years	343	412	385	342	318	316	322	309	333	301	338
40 to 44 years	244	271	254	220	234	278	277	263	263	252	255
45 to 49 years	213	262	219	231	238	220	255	204	192	186	222
50 to 54 years	194	209	200	198	197	188	183	242	206	183	200
55 to 59 years	175	186	139	155	165	199	165	181	159	147	167
60 to 64 years	151	175	151	145	153	170	179	158	151	141	157
65 to 69 years	123	137	154	147	163	169	142	165	168	160	152
70 to 74 years	107	121	111	103	126	138	120	141	136	116	121
75 to 79 years	67	65	66	76	88	76	101	86	78	72	77
80 to 90 years	25	39	28	31	43	42	48	39	41	47	38
90 years and over	1	3	......	4	1	3	8	6	4	4	3

PULMONARY TUBERCULOSIS

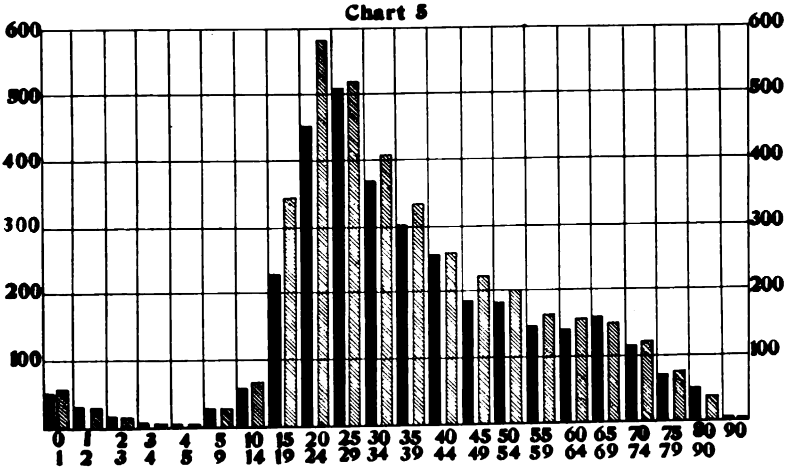
BY MONTHS

Chart 4



BY AGES

Chart 5



The following table of deaths by months shows March had the greatest number of deaths; and June had the lowest number of deaths.

January	3,313	July	2,708
February	3,111	August	2,985
March	3,484	September	2,908
April	3,199	October	2,964
May	2,695	November	2,785
June	2,420	December	3,199

March, April and May had the most tuberculosis deaths.

January, February and March had the most pneumonia deaths.

August and September were highest in diarrheal diseases.

October had the most typhoid deaths, 112.

TUBERCULOSIS DEATH RATES PER 100,000 BY COUNTIES FOR 1912 IN INDIANA.

State Rate, 148.2.
Northern Counties, 114.4.
Southern Counties, 179.3.

COUNTIES.	Tuberculosis, All Forms.	COUNTIES.	Tuberculosis, All Forms.
Adams	96.0	**Lawrence**	180.0
Allen	122.8	**Madison**	129.9
Bartholomew	160.8	**Marion**	185.0
Benton	55.1	**Marshall**	119.9
Blackford	125.8	**Martin**	253.3
Boone	165.5	**Miami**	101.4
Brown	100.3	**Monroe**	194.3
Carroll	89.0	**Montgomery**	118.4
Cass	163.7	**Morgan**	145.8
Clark	171.8	**Newton**	85.6
Clay	140.6	**Noble**	62.0
Clinton	137.9	**Ohio**	115.5
Crawford	282.0	**Orange**	197.5
Daviess	169.4	**Owen**	113.9
Dearborn	158.4	**Parke**	274.6
Decatur	154.0	**Perry**	165.3
Dekalb	159.2	**Pike**	167.7
Delaware	154.7	**Porter**	77.6
Dubois	131.1	**Posey**	152.0
Elkhart	99.0	**Pulaski**	135.2
Fayette	117.2	**Putnam**	131.5
Floyd	231.0	**Randolph**	137.4
Fountain	122.1	**Ripley**	179.2
Franklin	208.7	**Rush**	170.2
Fulton	71.0	**Scott**	168.2
Gibson	178.9	**Shelby**	188.7
Grant	135.6	**Spencer**	178.9
Greene	164.4	**Starke**	94.5
Hamilton	151.5	**Steuben**	132.7
Hancock	173.4	**St. Joseph**	138.2
Harrison	242.2	**Sullivan**	117.9
Hendricks	172.7	**Switzerland**	121.1
Henry	98.8	**Tippecanoe**	176.4
Howard	150.8	**Tipton**	114.4
Huntington	72.2	**Union**	159.8
Jackson	190.0	**Vanderburgh**	215.3
Jasper	122.5	**Vermillion**	104.0
Jay	136.0	**Vigo**	155.8
Jefferson	229.5	**Wabash**	89.1
Jennings	161.9	**Warren**	146.8
Johnson	137.0	**Warrick**	150.0
Knox	130.6	**Washington**	172.0
Kosciusko	64.3	**Wayne**	128.9
Lagrange	99.0	**Wells**	124.6
Lake	117.9	**White**	102.2
Laporte	111.7	**Whitley**	100.3

MONTHLY ANALYSIS OF TUBERCULOSIS.

(As Published in Monthly Bulletin.)

January, 1912.—Total number of tuberculosis deaths, 359, 300 being of the pulmonary form. Males, 172; females, 187. Of the males, 26 were married, in the age period of 18 to 40 and left 52 orphans under 12 years of age. Of the females, 72 were married in the same age period, and left 144 orphans under 12 years of age. Total orphans under 12 years of age, 196. Total number of homes invaded, 338.

February, 1912.—Total number of tuberculosis deaths, 363, 326 being of the pulmonary form and 37 other forms. Males, 180; females, 183. Of the males, 35 were married in the age period, 18 to 40, and left 70 orphans. Of the females, 69 were married in the same age period as above and left 138 orphans. Total orphans by tuberculosis, 208. Number of homes invaded, 343.

March, 1912.—Total number of tuberculosis deaths, 440, of which 376 were pulmonary and 64 other forms; males, 209; females, 231. Of the males, 34 were married in the age period 18 to 40 and left 68 orphans under 12 years of age. Of the females, 75 were married in the age period 18 to 40 and left 150 orphans under 12 years of age. Total orphans by tuberculosis, 218. Total number of homes invaded, 429.

April, 1912.—Total number of tuberculosis deaths, 376, of which 306 were pulmonary and 70 other forms. Males, 183; females, 193. Of the males, 30 were married in age period 18 to 40, and left 60 orphans under 12 years of age. Of the females, 60 were married in the same age period as above and left 120 orphans. Total tuberculosis orphans, 180. Total homes invaded, 357.

May, 1912.—Total number of tuberculosis deaths, 368, of which 314 were pulmonary and 54 other forms. Males, 176; females, 192. Of the males, 34 were married in the age period 18 to 40 and left 68 orphans under 12 years of age. Of the females, 63 were married in the same age period as above, and left 126 orphans. Total orphans caused by consumption in one month 194. Number of homes invaded, 359.

June, 1912.—Total number of tuberculosis deaths, 290, of which 236 were of the pulmonary form and 54 other forms. Male deaths numbered 136, female deaths, 154. In the corresponding month last year, 339 deaths; males, 161; females, 178. In the preceding month, 368 deaths; males, 176; females, 192. A marked decrease is apparent as compared with the corresponding month of last year and with June, 1909 when 389 deaths occurred. Of the males, 43 were married and left 70 orphans under 12 years of age. Of the females, 79 were married and left 128 orphans. Total orphans left by consumption in one month, 198. Number of homes invaded, 284.

July, 1912.—Total number of tuberculosis deaths, 306, of which 261 were of the pulmonary form and 45 other forms; males, 131; females, 175. Of the males, 23 were married in the age period 18 to 40 and left 46 orphans under 12 years of age. Of the females, 33 were married in the same age period as above and left 88 orphans under 12 years of age. Total number of orphans caused by tuberculosis in one month, 134. Number of homes invaded, 293.

August, 1912.—Total number of tuberculosis deaths, 278, of which 243 were of the pulmonary form and 35 other forms; males, 132; females, 146. Of the males, 22 were married in the age period 18 to 40 and left 44 orphans under 12 years of age. Of the females, 48 were married in the same age period as above and left 96 orphans under 12 years of age. Total number of orphans caused by tuberculosis in one month, 140. Number of homes invaded, 234.

September, 1912.—Total number of tuberculosis deaths, 251, of which 200 were of the pumonary form and 51 other forms. Males, 125; females, 126. Of the males, 18 were married in the age period of 18 to 40 and left 36 orphans under 12 years of age. Of the females, 45 were in the same age period and left 90 orphans under 12 years of age. Total number of orphans caused by tuberculosis in on month, 126. Number of homes invaded, 237.

October, 1912.—Total number of tuberculosis deaths, 285, of which 132 were males and 153 females. Of the males, 17 were married in the age period of 18 to 40 and left 34 orphans under 12 years of age. Of the females, 51 were married in the age period of 18 to 40 and left 102 orphans under 12 years of age. Total number of orphans 136, number of homes invaded, 261.

November, 1912.—Total number of tuberculosis deaths, 273, of which 143 were males and 130 females. Of the males, 27 were married in the age period 18 to 40 and left 54 orphans under 12 years of age. Of the females, 37 were married in the same age period as above, and left 74 orphans under 12 years of age. Total number of orphans, 136 number of homes invaded, 251.

December, 1912.—Total number of tuberculosis deaths, 284, of which 243 were of the pulmonary form, 127 males and 157 females. Of the males, 20 were married in the age period of 18 to 40 and left 40 orphans under 12 years of age. Of the females, 60 were married in the age period of 18 to 40, and left 120 orphans under 12 years of age. Total number of orphans, 160. Number of homes invaded, 261.

PNEUMONIA.

Deaths by Months, with Average for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average
January	450	579	601	490	445	425	303	349	484	483	364
February	424	750	781	439	646	454	384	327	422	413	420
March	419	761	656	541	532	414	546	417	373	441	510
April	330	576	260	404	290	277	436	223	338	323	345
May	240	326	189	232	276	166	188	193	172	154	212
June	129	115	90	119	144	74	64	127	56	71	98
July	83	101	82	88	62	45	47	59	56	60	68
August	86	69	69	82	68	52	52	79	62	81	70
September	114	86	88	98	75	69	75	87	82	94	86
October	134	135	148	189	145	103	130	154	116	167	142
November	246	251	253	30	218	195	196	299	203	210	234
December	389	353	372	410	301	243	253	426	248	342	334
Totals	3,044	4,102	3,594	3,392	3,202	2,517	2,638	2,740	2,612	2,838	3,067

PNEUMONIA.

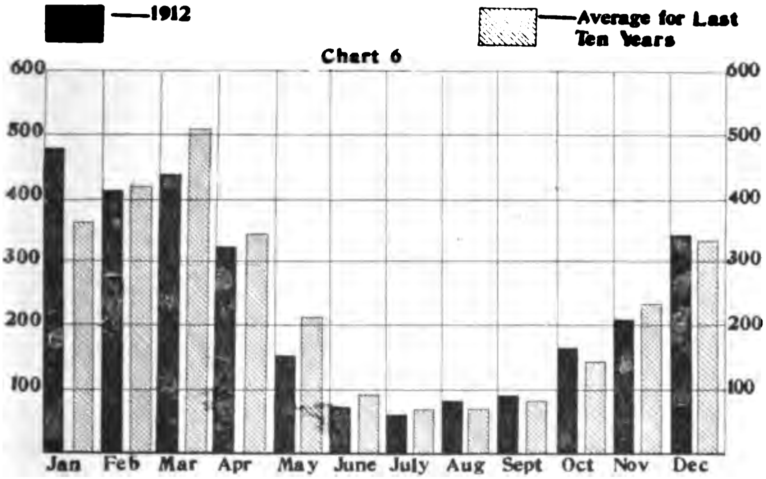
Deaths by Ages, with Averages for Last Ten Years.

AGES.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	703	919	898	714	639	623	768	731	595	713	730
1 to 2 years	216	326	251	262	209	163	206	207	167	221	222
2 to 3 years	107	145	97	127	96	63	103	94	71	105	100
3 to 4 years	57	87	63	67	57	19	41	39	44	30	50
4 to 5 years	34	53	28	46	29	22	18	23	27	25	30
5 to 9 years	102	145	90	91	65	55	65	71	55	60	79
10 to 14 years	57	72	71	50	40	35	34	24	29	34	44
15 to 19 years	88	128	89	95	63	50	52	50	62	44	72
20 to 24 years	83	108	83	77	84	61	53	59	49	57	71
25 to 29 years	72	98	79	89	90	50	49	58	52	53	69
30 to 34 years	58	104	90	86	87	63	60	62	68	61	73
35 to 39 years	78	114	107	104	98	75	66	69	65	62	83
40 to 44 years	77	105	98	106	88	71	68	73	77	87	85
45 to 49 years	103	137	106	112	100	78	57	69	68	79	90
50 to 54 years	89	137	130	130	143	72	85	100	117	98	110
55 to 59 years	132	136	140	137	125	101	108	104	108	110	120
60 to 64 years	164	195	173	155	172	122	113	114	131	127	146
65 to 69 years	172	225	237	216	215	168	162	152	147	161	185
70 to 74 years	202	261	270	229	243	212	147	189	209	198	215
75 to 79 years	192	268	226	232	238	180	166	187	189	207	208
80 to 90 years	204	271	237	232	280	209	183	233	254	258	236
90 years and over	27	42	28	25	33	18	34	32	28	52	31

PNEUMONIA DEATHS

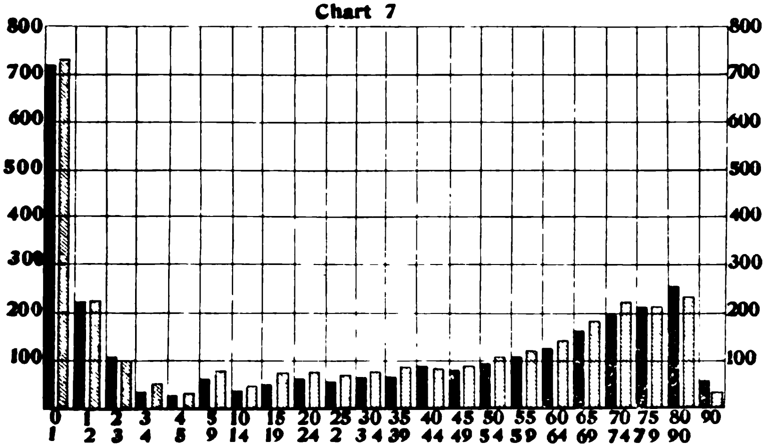
BY MONTHS

Chart 6



BY AGES

Chart 7



MONTHLY ANALYSIS OF PNEUMONIA DEATHS.

(As Published in Monthly Bulletin).

January, 1912.—Total number of pneumonia deaths, 506; 266 males, 240 females. Only five counties did not report deaths from pneumonia. They were: Wells, Fayette, Johnson, Union, and Ohio. In the same month last year, 457 deaths; 251 males and 206 females. Only five counties escaped deaths from this disease last year and they were: Brown, Fayette, Rush, Union and Ripley.

February, 1912.—Total number of pneumonia deaths, 389; 219 males, and 170 females. This disease was present in every county in the State and caused deaths in all except the following named counties: Newton, Decatur, Fayette, Tipton, Warren, Dubois, Jennings, Scott. In the preceding month, 506 deaths. In the same month last year, 398.

March, 1912.—Total number of pneumonia deaths, 439; males, 241; females, 198. In the same month last year, 357 deaths; males, 188; females, 171. Only ten counties escaped deaths from pneumonia.

April, 1912.—Total number of pneumonia deaths, 358. In the same month last year, 287 deaths. Males, 186, females, 172. Pneumonia appeared in all but two counties of the State, and caused deaths in all but ten.

May, 1912.—Total number of pneumonia deaths, 160; rate 69.1. Males, 87; females, 73. In the same month last year, 287 deaths. In the preceding month, 358 deaths.

June, 1912.—Total number of pneumonia deaths, 75; rate 33.5. In the same month last year, 48 deaths. In the preceding month, 160 deaths; rate 69.1. Male deaths, 32; female deaths, 43. Pneumonia deaths under one year of age, 20; 50 years and over, 31.

July, 1912.—Total number of pneumonia deaths, 65; rate 28 per 100,000. In the preceding month, 75 deaths; rate, 33.5. In the same month last year, 56 deaths; rate 24.4. In July, pneumonia male deaths numbered 22; females, 43. Seventeen infants under 1 year of age succumbed to the disease. Nine infants in age period 1 to 4 died from same cause.

August, 1912.—Total number of pneumonia deaths, 84; rate 36.3 per 100,000. In the preceding month, 65 deaths; rate, 33.5. In the same month last year, 62 deaths; rate 27. In August the pneumonia male deaths numbered 46; females, 38. Fifteen infants under 1 year of age succumbed to the disease. Seventeen infants in age period from 1 to 4 died from same cause.

September, 1912.—Total number of pneumonia deaths, 91; rate 40.6 per 100,000. In the preceding month, total deaths, 84; rate 36.3. In the same month last year, 76; rate 34.2. Twenty-three infants under one year of age succumbed to the disease; 15 in the age period of 1 to 4. Twenty-two of the pneumonia deaths were of persons between 60 and 80 years of age.

October, 1912.—Total number of pneumonia deaths, 163; rate 70.4 per 100,000. In the preceding month 91 deaths; rate 40.6. In the same month last year, 113 deaths; rate 49.2.

November, 1912.—Total number of pneumonia deaths, 228; rate, 101.4 per 100,000. In the preceding month, 163 deaths; rate, 70.4. In the same month last year, 198 deaths.

December, 1912.—Total number of pneumonia deaths, 322; rate 139.2 per 100,000. In the preceding month, 228 deaths; rate 101.4. In the same month last year, 275 deaths; rate 119.8. Of the pneumonia deaths, 62 occurred in infants under one year of age.

TYPHOID FEVER.

Deaths by Months, with Average for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	61	36	511	39	72	50	40	55	44	29	93
February	53	55	35	29	57	49	21	33	42	42	41
March	55	62	34	40	48	49	38	36	36	42	44
April	45	61	26	32	38	38	34	36	47	33	39
May	39	55	33	39	42	32	36	28	31	35	37
June	42	58	43	29	30	32	37	28	28	30	35
July	64	70	57	52	58	63	80	45	78	33	60
August	120	107	121	96	145	93	119	126	109	70	110
September	193	138	203	155	141	121	144	128	91	102	141
October	165	167	154	168	133	150	162	168	99	109	146
November	104	137	101	148	84	121	110	126	77	81	108
December	72	67	65	86	75	87	54	65	54	46	67
Totals	1,013	1,013	928	913	933	885	875	934	736	652	888

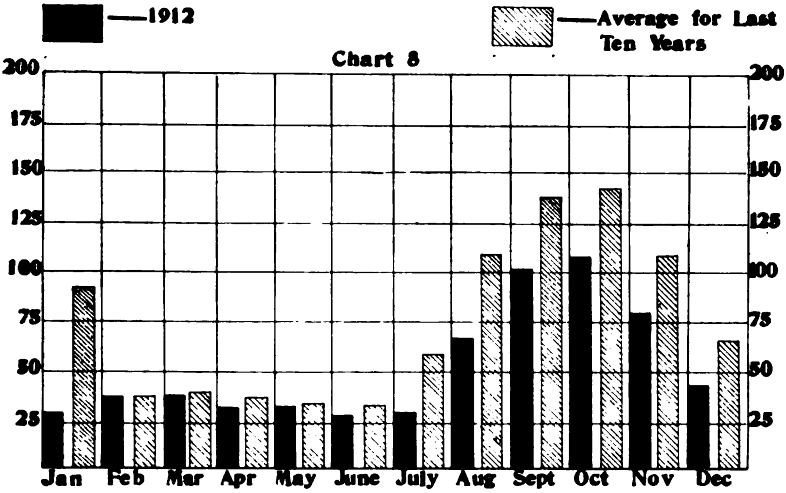
TYPHOID FEVER.

Deaths by Ages, with Average for Last Ten Years.

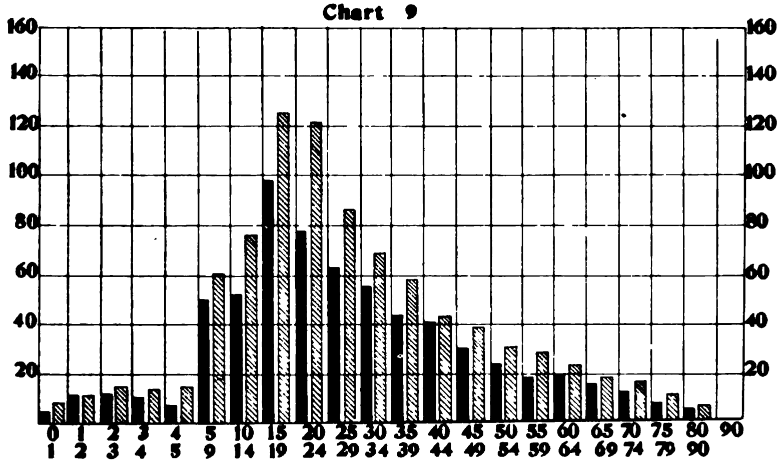
AGES.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	4	16	11	12	8	11	9	6	1	4	8
1 to 2 years	13	11	14	11	7	10	10	12	9	10	10
2 to 3 years	12	18	16	13	13	19	15	12	16	11	14
3 to 4 years	17	8	11	19	13	19	10	12	11	10	13
4 to 5 years	16	16	18	18	10	12	11	18	14	7	14
5 to 9 years	77	74	72	65	58	45	64	62	50	49	61
10 to 14 years	102	82	74	85	92	72	82	74	65	53	77
15 to 19 years	160	133	125	138	145	105	141	125	92	97	126
20 to 24 years	136	137	136	120	126	131	102	138	106	78	121
25 to 29 years	102	89	94	94	94	96	90	90	64	63	87
30 to 34 years	62	73	64	76	79	76	74	74	63	55	69
35 to 39 years	62	73	45	62	67	57	55	71	57	44	59
40 to 44 years	49	47	49	34	46	45	37	47	40	41	43
45 to 49 years	45	49	46	37	41	40	36	45	25	30	39
50 to 54 years	33	45	32	36	32	41	34	39	20	24	32
55 to 59 years	35	37	31	22	24	29	32	37	28	19	29
60 to 64 years	18	42	30	18	28	28	24	11	24	20	24
65 to 69 years	21	22	20	16	16	17	20	19	25	15	19
70 to 74 years	19	18	19	10	17	15	9	19	17	11	15
75 to 79 years	12	10	9	15	10	11	8	14	8	7	10
80 to 90 years	11	7	8	8	5	4	10	9	1	4	6
90 years and over	1	....	....	....	....	1	2	....	....	....	....

TYPHOID FEVER DEATHS

BY MONTHS



BY AGES



MONTHLY ANALYSIS FOR TYPHOID FEVER.

(As Published in Monthly Bulletin).

January, 1912.—One hundred and thirty-one cases reported in 34 counties with 29 deaths. In the same month last year, 115 cases in 35 counties with 39 deaths.

February, 1912.—Two hundred and sixty-four cases reported in 28 counties with 41 deaths. In the same month last year, 187 cases in 38 counties with 31 deaths.

March, 1912.—Two hundred and fourteen cases with 39 deaths in 34 counties. In the same month last year, 91 cases with 36 deaths in 26 counties.

April, 1912.—Two hundred and nine cases in 29 counties with 31 deaths. In the same month last year, 135 cases in 26 counties with 40 deaths.

May, 1912.—One hundred and ninety-one cases in 37 counties with 35 deaths. In the preceding month, 209 cases in 29 counties with 31 deaths. In the same month last year, 134 cases in 39 counties with 29 deaths.

June, 1912.—One hundred and fifty-three cases in 49 counties with 29 deaths. In the preceding month, 191 cases in 37 counties with 35 deaths. In the same month last year, 138 cases in 42 counties with 29 deaths.

July, 1912.—Two hundred and forty-five cases in 55 counties with 32 deaths. In the preceding month, 153 cases in 49 counties with 29 deaths. In the same month last year, 296 cases in 59 counties with 72 deaths.

August, 1912.—Four hundred and eighteen cases in 75 counties with 70 deaths. In the preceding month, 245 cases in 55 counties with 32 deaths. In the same month last year, 524 cases in 92 counties with 102 deaths.

September, 1912.—Six hundred and forty-three cases in 77 counties with 93 deaths. In the preceding month, 418 cases in 75 counties with 70 deaths. In the same month last year, 642 cases in 72 counties with 91 deaths.

October, 1912.—Four hundred and twenty-six cases in 69 counties with 112 deaths. In the preceding month 643 cases in 77 counties with 93 deaths. In the same month last year, 642 cases in 72 counties with 91 deaths.

November, 1912.—Three hundred and two cases in 61 counties with 82 deaths. In the preceding month, 426 cases in 69 counties with 112 deaths. In the same month last year, 251 cases reported from 56 counties with 74 deaths.

December, 1912.—One hundred and nine cases in 39 counties with 43 deaths. In the preceding month, 302 cases in 61 counties with 82 deaths. In the same month last year, 168 cases in 50 counties with 50 deaths.

DIPHTHERIA.

Deaths by Months, with Averages for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	61	51	32	33	43	42	38	42	40	25	40
February	49	35	31	23	41	28	24	19	31	29	31
March	27	29	27	26	35	24	18	32	22	25	26
April	22	32	13	16	27	12	10	15	17	19	18
May	12	22	13	8	20	12	5	15	9	19	13
June	16	18	8	12	10	8	3	18	18	7	11
July	15	10	16	11	15	11	8	11	13	10	12
August	23	12	15	13	20	12	19	24	13	25	17
September	35	11	34	36	35	32	26	28	32	68	33
October	69	21	82	77	36	43	35	52	78	107	60
November	77	35	41	82	37	47	57	79	54	106	61
December	56	38	54	65	34	44	55	46	47	78	51
Totals	462	314	366	402	353	315	338	381	374	518	382

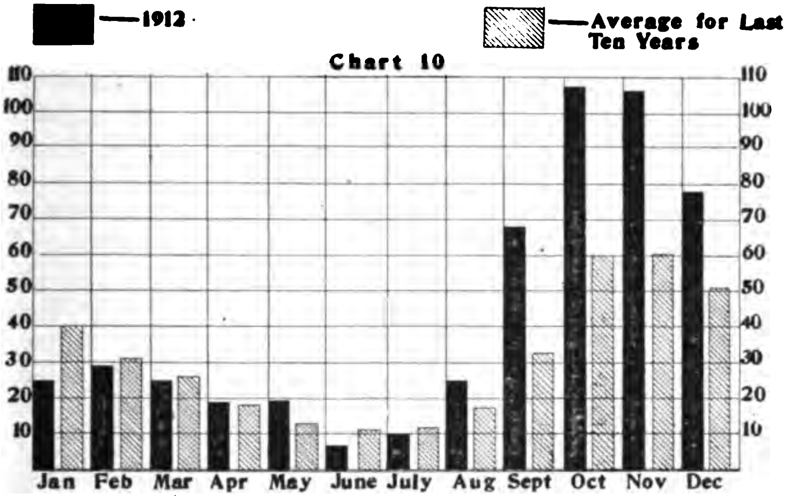
DIPHTHERIA.

Deaths by Ages, with Average for Last Ten Years.

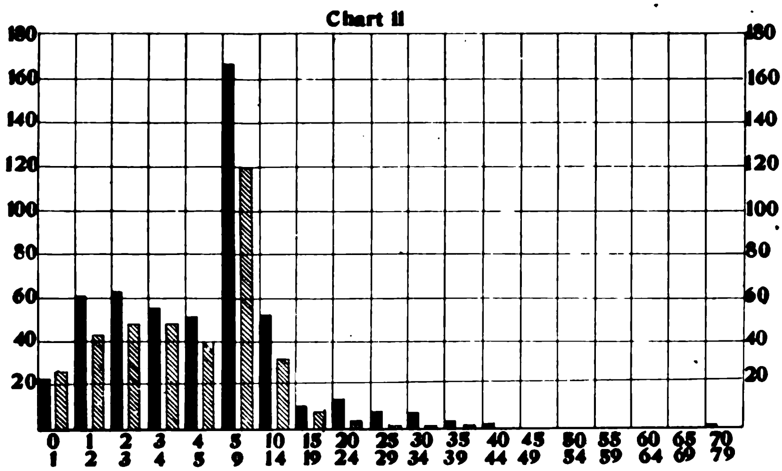
AGES.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	50	28	23	26	20	21	21	28	21	23	26
1 to 2 years	59	47	35	45	34	43	31	44	38	61	43
2 to 3 years	56	33	48	51	35	54	52	43	53	63	48
3 to 4 years	64	46	53	47	51	36	46	42	49	55	48
4 to 5 years	46	22	41	58	30	23	40	43	51	52	40
5 to 9 years	141	99	114	124	127	90	117	119	110	167	120
10 to 14 years	28	26	28	35	32	23	28	35	34	52	32
15 to 19 years	9	5	10	10	7	9	7	14	7	11	8
20 to 24 years	3	1	7	1	8	3	5	4	3	14	4
25 to 29 years	......	1	3	......	3	3	......	4	2	7	2
30 to 34 years	2	1	1	......	1	4	1	1	3	7	1
35 to 39 years	......	1	1	1	2	3	1	1	1	3	1
40 to 44 years	......	......	......	2	2	......	......	1	......	2	......
45 to 49 years	......	......	......	......	1	......	......	......	......	......	......
50 to 54 years	......	1	......	1	......	......	......	1	......	......	......
55 to 59 years	1	......	2	......	1	1	......	......	......	......	......
60 to 64 years	......	......	......	......	......	1	......	1	......	......	......
65 to 69 years	1	......	......	......	......	......	......	......	2	......	......
70 to 79 years	1	......	......	......	......	......	......	......	......	1	......

DIPHTHERIA DEATHS

BY MONTHS



BY AGES



MONTHLY ANALYSIS FOR DIPHTHERIA DEATHS.

(As Published in Monthly Bulletin).

January, 1912.—Two hundred and twenty-five cases in 41 counties with 7 deaths. In the same month last year, 279 cases in 51 counties with 35 deaths.

February, 1912.—One hundred and ninety-four cases in 37 counties with 29 deaths. In the same month last year, 187 cases in 38 counties with 31 deaths.

March, 1912.—One hundred and sixty-eight cases, with 24 deaths reported from 43 counties. In the same month last year, 209 cases with 21 deaths in 34 counties.

April, 1912.—One hundred and twenty cases in 33 counties, with 14 deaths. In the same month least year, 104 cases in 24 counties with 15 deaths.

May, 1912.—Ninety-five cases in 30 counties with 18 deaths. In the preceding month, 120 cases in 33 counties with 14 deaths. In the same month last year, 145 cases in 28 counties with 9 deaths.

June, 1912.—Ninety-three cases reported in 27 counties with 7 deaths. In the preceding month, 95 cases in 30 counties with 18 deaths. In the same month last year, 138 cases in 42 counties with 29 deaths.

July, 1912.—Seventy-eight cases in 24 counties with 11 deaths. In the preceding month, 93 cases in 27 counties with 7 deaths. In the same month last year, 116 cases in 24 counties with 10 deaths.

August, 1912.—Two hundred and forty-seven cases in 39 counties with 24 deaths. In the preceding month, 78 cases in 24 counties with 11 deaths. In the same month last year, 135 cases in 34 counties with 12 deaths.

September, 1912.—Six hundred and eight cases in 53 counties with 64 deaths. In the preceding month, 247 cases in 36 counties with 24 deaths. In the same month last year, 267 cases in 40 counties with 29 deaths.

October, 1912.—One thousand and ninety-eight cases with 99 deaths in 63 counties. The disease was epidemic in the following counties: Allen, Bartholomew, Blackford, Clark, Daviess, Dearborn, Greene, Harrison, Hendricks, Johnson, Knox, Lake, Lawrence, Madison, Martin, Monroe, Parke, Perry, Pike, Posey, St. Joseph, Sullivan, Vanderburgh, Vigo, and Wayne. In the preceding month, 608 cases in 53 counties with 64 deaths. In the same month last year, 2,437 cases in 69 counties with 68 deaths.

November, 1912.—Nine hundred and forty-five cases in 65 counties with 99 deaths. The disease was epidemic in the following counties: Allen, Bartholomew, Blackford, Clark, Daviess, Dearborn, Hendricks, Jay, Lake, Lawrence, Madison, Marion, Martin, Monroe, Montgomery, Parke, Pike, Posey, Pulaski, Sullivan, Vanderburgh, Vigo, and Warrick. In the preceding month, 1,098 cases in 63 counties with 99 deaths.

December, 1912.—Seven hundred and two cases, with 77 deaths in 63 counties. The disease was epidemic in the following counties: Allen, Blackford, Clark, Clay, Daviess, Dearborn, Elkhart, Floyd, Fountain, Greene, Jay, Knox, Laporte, Madison, Marion, Monroe, Parke, Pike, St. Joseph, Tippecanoe, Vanderburgh, and Vigo. In the preceding month, 945 cases in 65 counties with 99 deaths. In the same month last year, 328 cases in 49 counties with 48 deaths.

SCARLET FEVER.

Deaths by Months, with Average for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	22	24	18	11	6	13	11	16	26	7	15
February	13	24	11	9	9	17	11	33	19	14	16
March	10	33	20	12	18	10	7	26	33	7	17
April	9	22	21	7	9	15	11	21	23	15	15
May	4	15	11	7	5	5	14	21	17	4	10
June	6	9	4	10	3	5	9	13	12	4	7
July	13	4	14	7	10	4	9	11	5	4	8
August	8	6	6	3	5	1	6	11	4	5	5
September	13	7	5	6	3	6	8	8	10	5	7
October	16	12	5	8	7	4	21	11	7	10	10
November	18	17	11	14	8	5	19	21	5	14	13
December	34	19	7	7	8	10	25	13	11	24	15
Totals	166	192	133	101	91	95	151	205	179	113	142

SCARLET-FEVER.

Deaths by Ages, with Average for Last Ten Years.

AGES.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	13	13	10	5	4	4	9	13	7	5	8
1 to 2 years	9	27	18	13	7	8	22	24	13	14	15
2 to 3 years	17	33	20	10	15	17	15	21	24	12	18
3 to 4 years	22	25	17	15	13	12	20	23	14	16	17
4 to 5 years	19	18	14	10	7	10	15	19	16	10	13
5 to 9 years	55	61	38	27	31	22	53	61	66	29	44
10 to 14 years	19	11	11	8	8	9	11	20	18	11	12
15 to 19 years	3	2	1	2	5	5	3	10	10	5	4
20 to 24 years	3	1	1	10	......	2	1	7	5	2	3
25 to 29 years	......	......	2	......	1	4	......	4	2	6	1
30 to 34 years	1	......	......	1	......	2	1	......	3	1	....
35 to 44 years	1	......	......	......	......	......	1	1	1	1	....
45 to 54 years	......	1	1	......	......	......	......	......	......	1	....
55 to 90 years	1	......	......	......	......	......	......	2	......	......	....

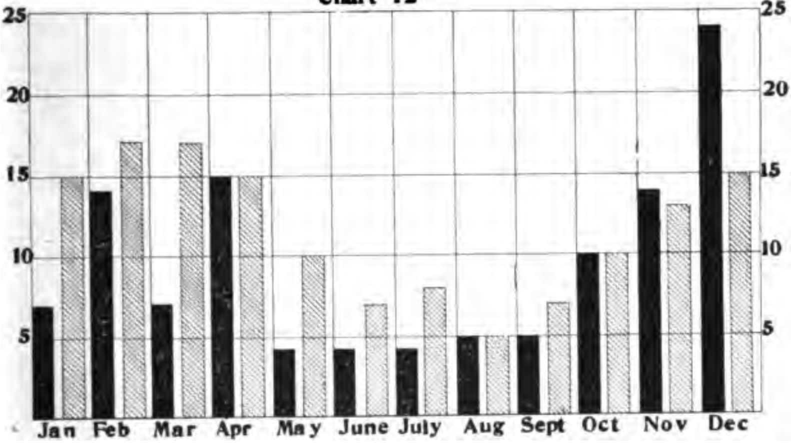
SCARLET FEVER DEATHS

BY MONTHS

■ —1912

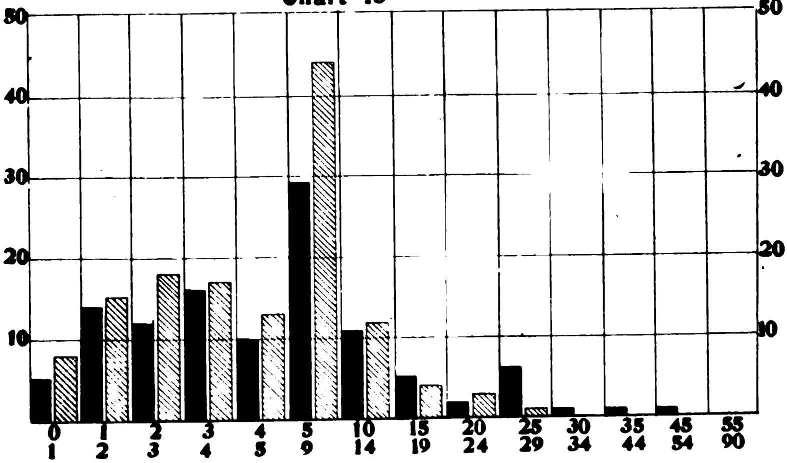
▨ —Average for Last Ten Years

Chart 12



BY AGES

Chart 13



DIARRHOEAL DISEASES.

UNDER TWO YEARS OF AGE.

Deaths by Months, with Average for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	11	29	26	28	34	39	34	45	54	50	33
February	22	30	30	25	34	33	46	30	42	45	33
March	20	33	36	29	35	34	57	39	52	50	38
April	17	24	22	39	18	48	39	45	52	53	35
May	25	29	35	42	35	39	46	63	57	45	41
June	83	54	116	71	81	89	165	128	141	57	98
July	323	307	359	321	396	322	460	491	357	272	360
August	475	498	469	484	503	420	441	528	285	376	447
September	275	344	343	447	280	292	304	356	260	360	346
October	140	204	186	232	160	204	146	203	208	215	189
November	36	49	54	66	40	83	50	72	75	68	59
December	22	28	24	39	25	32	53	49	46	34	35
Totals	1,449	1,629	1,700	1,823	1,639	1,635	1,841	2,049	1,629	1,625	1,701

DIARRHOEAL DISEASES.

Deaths by Months, with Average for Last Ten Years, Two Years of Age and Over.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	24	30	32	26	40	38	30	36	20	25	30
February	20	38	29	36	33	26	28	20	27	34	29
March	27	37	42	35	41	35	37	28	29	35	34
April	23	28	27	41	38	28	22	24	32	27	29
May	40	33	28	30	29	43	38	29	23	29	32
June	36	30	44	29	63	57	46	34	35	29	42
July	93	73	87	78	150	116	35	99	66	66	86
August	131	110	152	119	203	165	105	146	70	112	131
September	116	104	94	130	122	143	76	83	51	102	102
October	64	63	67	92	62	88	34	62	48	56	63
November	26	32	28	39	42	50	35	28	31	30	34
December	22	33	28	40	24	28	27	31	40	21	29
Totals	622	611	658	695	847	817	563	620	492	566	649

DIARRHOEAL DISEASES

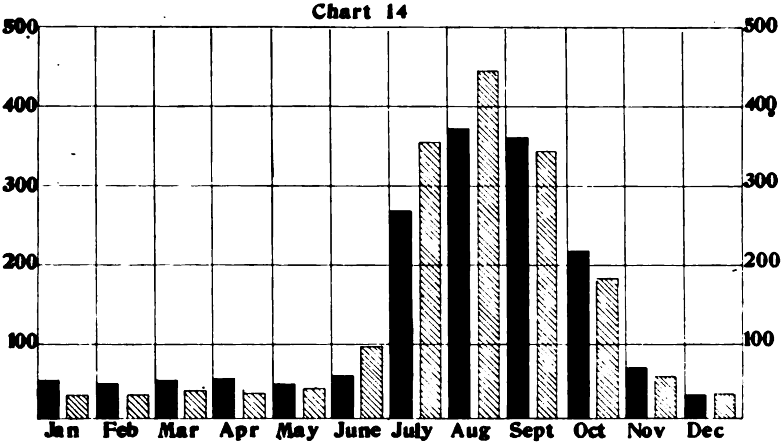
BY MONTHS

Under two years of age

■ —1912

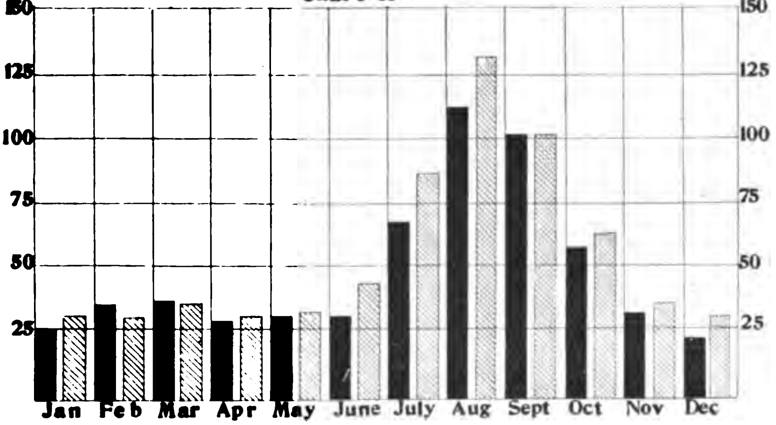
▨ —Average for Last Ten Years

Chart 14



Two years and over

Chart 15



DIARRHOEAL DISEASES

Deaths by Ages, with Average for Last Ten Years.

AGES.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	894	1,068	1,115	1,240	1,202	1,202	1,340	1,576	1,260	1,219	1,211
1 to 2 years	421	384	406	417	437	433	501	473	369	406	424
2 to 3 years	110	112	130	116	105	126	125	140	82	134	118
3 to 4 years	19	40	36	31	33	34	25	37	22	28	30
4 to 5 years	11	21	13	20	11	16	18	13	13	12	14
5 to 9 years	12	31	29	17	19	16	19	22	23	19	20
10 to 14 years	11	13	10	6	12	6	7	9	4	11	8
15 to 19 years	6	4	8	8	4	3	5	9	4	2	5
20 to 24 years	9	15	17	12	16	14	8	8	9	10	11
25 to 29 years	12	13	16	21	7	14	11	3	6	7	11
30 to 34 years	20	14	10	10	10	11	14	7	11	11	11
35 to 39 years	14	15	22	17	20	13	11	10	13	6	14
40 to 44 years	15	19	20	19	13	12	20	11	11	9	14
45 to 49 years	24	19	13	14	13	19	17	15	14	19	16
50 to 54 years	36	33	25	30	30	20	29	18	19	14	25
55 to 59 years	37	37	51	37	35	46	19	16	21	25	36
60 to 64 years	45	57	72	59	61	45	42	37	34	27	47
65 to 69 years	67	68	68	90	78	78	98	50	37	38	67
70 to 74 years	98	88	93	99	97	81	92	61	45	54	80
75 to 79 years	91	88	95	107	117	103	132	66	43	62	90
80 to 90 years	94	89	104	124	141	132	148	66	71	62	103
90 years and over	13	12	13	18	20	22	33	17	10	16	17

DIARRHOEAL DISEASES

BY AGES

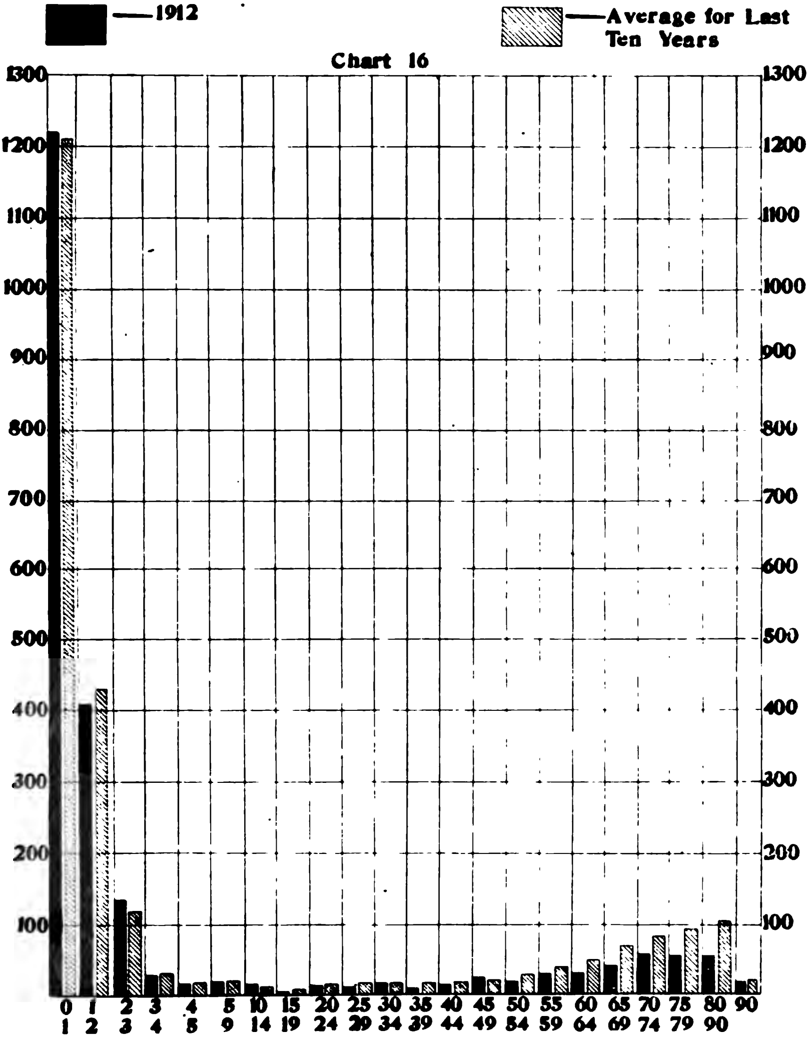


Chart 16

INFLUENZA.

Deaths by Months, with Average for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	31	45	114	53	71	172	54	88	197	72	84
February	51	90	221	44	159	316	77	144	172	98	137
March	87	146	151	48	234	167	126	201	154	74	138
April	60	70	37	30	51	70	135	97	90	46	68
May	37	20	15	7	52	40	42	35	19	9	27
June	10	7	7	2	14	13	9	10	3	7	8
July	7	2	5	4	7	9	9	12	1	5	6
August	9	5	......	2	4	14	4	4	4	1	4
September	3	1	4	3	4	5	7	3	......	6	3
October	7	4	4	8	2	4	4	10	7	11	6
November	10	18	12	11	17	22	10	22	23	18	16
December	36	26	21	12	51	35	27	75	37	73	39
Totals	348	434	591	224	666	867	504	701	659	420	541

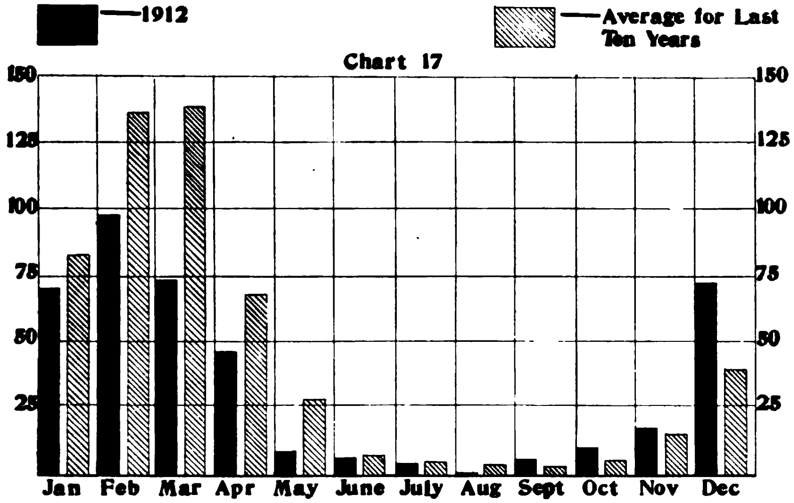
INFLUENZA.

Deaths by Ages for Last Ten Years.

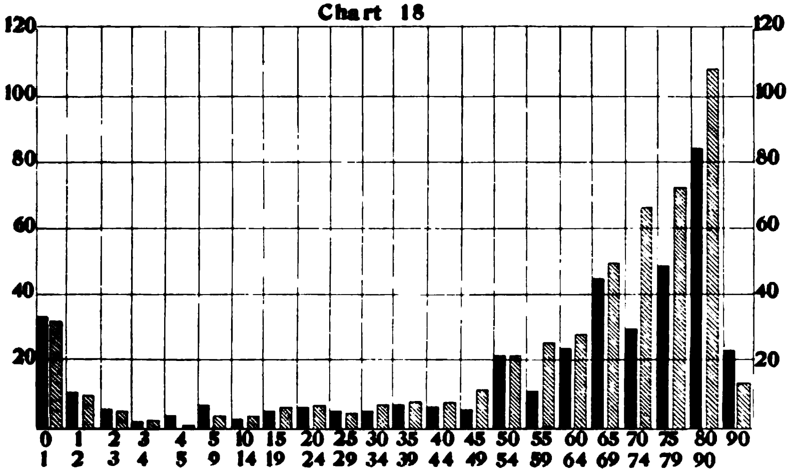
AGES.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	13	32	43	14	26	32	44	46	42	33	32
1 to 2 years	3	4	10	3	12	11	11	18	15	10	9
2 to 3 years	3	1	6	5	5	10	5	14	8	7	6
3 to 4 years	2	4	......	......	3	6	4	3	7	2	3
4 to 5 years	2	......	1	2	......	1	2	4	2	4	1
5 to 9 years	2	3	5	2	4	10	2	9	10	9	5
10 to 14 years	6	7	4	3	6	10	9	6	4	3	5
15 to 19 years	3	6	7	4	11	16	7	9	15	7	8
20 to 24 years	4	3	16	3	11	13	6	13	16	8	9
25 to 29 years	5	8	3	......	5	11	9	16	8	7	6
30 to 34 years	5	7	9	2	18	15	......	16	18	7	9
35 to 39 years	5	7	9	4	14	24	9	15	22	9	11
40 to 44 years	6	6	16	3	9	21	10	22	17	8	11
45 to 49 years	7	13	14	10	23	30	8	23	22	7	15
50 to 54 years	16	9	17	13	26	37	14	26	23	22	22
55 to 59 years	16	19	32	6	38	34	35	38	36	14	26
60 to 64 years	28	22	40	11	24	50	29	34	41	24	30
65 to 69 years	27	37	47	24	73	86	46	69	59	45	51
70 to 74 years	53	73	67	31	94	115	52	87	74	34	68
75 to 79 years	58	61	86	31	89	131	80	96	72	52	75
80 to 90 years	74	94	132	43	151	182	103	122	130	85	112
90 years and over	9	15	23	8	23	21	15	19	18	23	17

INFLUENZA DEATHS

BY MONTHS



BY AGES



MEASLES.

Deaths by Months, with Average for Last Ten Years.

Months.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
January	......	28	......	2	7	8	5	21	19	9	9
February	4	31	1	2	10	57	15	62	32	5	21
March	6	52	......	......	28	52	23	102	61	7	33
April	12	50	2	7	40	47	41	83	92	14	38
May	10	29	......	4	51	24	27	87	44	12	28
June	7	9	1	3	31	11	14	41	14	11	14
July	4	6	......	......	23	2	13	22	9	7	8
August	3	3	1	1	5	2	9	18	4	3	4
September	6	2	......	......	2	1	3	3	3	1	2
October	4	2	......	......	4	4	......	5	1	......	2
November	6	......	1	2	3	......	3	9	......	1	2
December	11	......	......	2	9	1	3	9	1	3	3
Totals	73	212	6	23	213	209	156	462	280	73	170

MEASLES.

Deaths by Ages, with Average for Last Ten Years.

Ages.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Average.
Under 1 year	17	65	3	5	49	50	27	73	52	10	35
1 to 2 years	19	27	......	9	55	29	39	116	66	18	37
2 to 3 years	6	26	1	1	30	13	19	69	31	6	20
3 to 4 years	3	7	......	......	9	14	9	32	19	5	9
4 to 5 years	2	10	......	1	6	8	7	17	7	1	5
5 to 9 years	3	13	......	1	20	26	20	49	34	9	17
10 to 14 years	3	10	......	......	6	9	9	24	11	5	7
15 to 19 years	5	9	......	1	7	16	2	10	5	2	5
20 to 24 years	2	6	......	1	3	5	5	10	4	3	3
25 to 29 years	4	1	......	1	6	8	6	9	13	1	4
30 to 34 years	1	5	......	2	1	4	2	14	7	4	4
35 to 39 years	1	11	......	1	6	7	2	10	9	2	4
40 to 44 years	1	7	......	......	4	5	5	7	7	2	3
45 to 49 years	1	6	......	......	2	3	2	7	2	2	2
50 to 54 years	3	2	1	......	2	5	2	1	......	......	1
55 to 59 years	......	......	......	......	......	......	......	8	2	2	1
60 to 64 years	......	1	......	......	3	......	......	2	4	......	1
65 to 69 years	1	1	......	......	1	1	......	1	4	......	......
70 to 74 years	......	1	......	......	......	3	......	2	3	......	......
75 to 79 years	......	2	......	......	2	1	......	2	......	......	......
80 to 90 years	......	2	......	......	1	......	......	......	......	1	......
90 years and over	1	......	......	......	......	......	......	......	......	......	......

MEASLES DEATHS

BY MONTHS

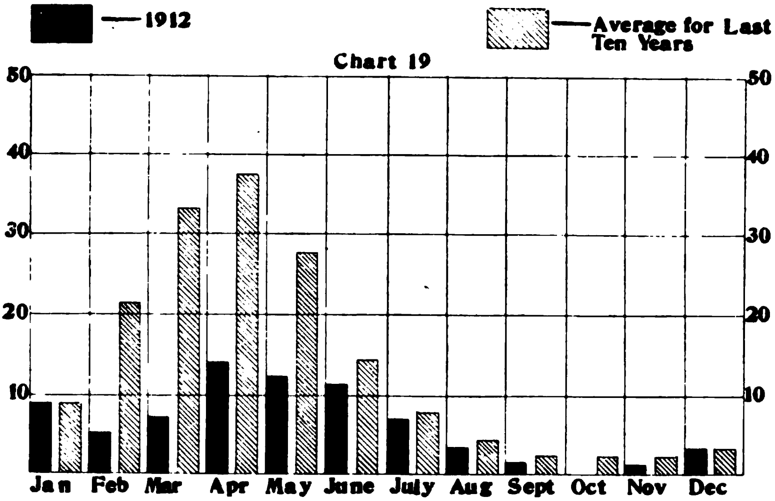


Chart 19

BY AGES

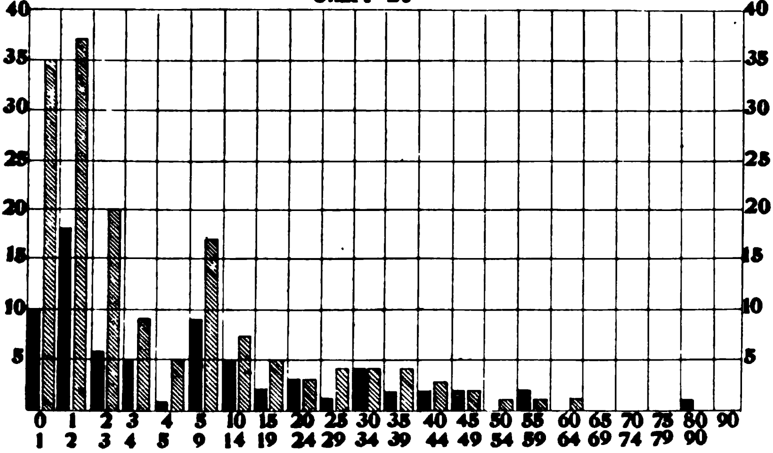


Chart 20

SMALLPOX.

Table Giving Number of Deaths by Months for Last Ten Years.

MONTHS.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Total.	Average.
January	51	8	7	......	3	......	......	......	......	......	69	6
February	55	5	11	......	2	1	......	1	......	2	77	7
March	31	3	3	......	......	2	......	......	2	3	44	4
April	21	6	3	1	1	2	1	......	......	2	37	3
May	10	7	3	......	1	......	3	......	......	......	22	2
June	3	3	4	......	1	3	......	......	1	3	18	1
July	4	6	3	1	......	......	2	......	......	......	16	1
August	14	3	......	......	......	......	......	......	......	......	17	1
September	2	17	......	2	......	......	......	......	......	......	21	2
October	......	18	......	3	......	......	......	......	......	1	22	2
November	1	13	......	......	......	......	1	......	......	......	15	1
December	3	8	1	1	......	2	......	......	......	1	16	1
Totals	195	97	35	8	8	10	5	1	3	12	374	37

MONTHLY ANALYSIS FOR SMALLPOX DEATHS.

(As Published in Monthly Bulletin).

January, 1912.—Eighty-nine cases in 15 counties with no deaths. In the same month last year, 155 cases in 12 counties with no deaths. The cases were as follows: Adams County, 3; Bartholomew, 33; Cass, 3; Clinton, 9; Fountain, 12; Hancock, 2; Howard, 5; Madison, 2; Marion, 1; Monroe, 1; Randolph, 7; St. Joseph, 1; Vanderburgh, 8; Wabash, 1; Wayne, 1.

February, 1912.—One hundred and eighty-one cases in 20 counties with 2 deaths. The cases were as follows: Bartholomew County, 36 cases, 1 death; Boone, 2; Cass, 8; Clinton, 1; Daviess, 1; Dearborn, 27; Fayette, 40; Fountain, 7; Gibson, 1; Grant, 1; Hendricks, 2; Johnson, 13; Madison, 2; Pike, 25; Rush, 4; St. Joseph, 2 cases, 1 death; Tipton, 5; Union, 2; Vanderburgh, 1; Wells, 1.

March, 1912.—Two hundred and fourteen cases in 22 counties with 3 deaths. In the same month last year, 117 cases in 21 counties with 2 deaths. Counties reporting the disease present were: Bartholomew, 30; Cass, 3; Clark, 1; Dearborn, 7; Delaware, 4; Elkhart, 1; Fayette, 80; Fountain, 3; Gibson, 9; Hendricks, 10; Howard, 16; Madison, 3; Marion, 5; Noble, 1; Pike, 25; Posey, 1; St. Joseph, 8 cases, 3 deaths; Sullivan, 4; Tipton, 25; Vanderburgh, 6; Vigo, 1; Wells, 1.

April, 1912.—One hundred and forty-one cases in 25 counties with 2 deaths. In the same month last year, 202 cases in 28 counties with no deaths. The counties reporting cases present were: Bartholomew, 30 cases and 1 death; Brown, 1; Cass, 1;

Clark, 19; Daviess, 2; Dearborn, 1; Decatur, 3; Delaware, 4; Fayette, 4; Gibson, 17; Grant, 3; Greene, 1; Howard, 2; Johnson, 9; Knox, 3; Madison, 4; Marion, 2; Pike, 2; Randolph, 1; St. Joseph, 9 cases with 1 death; Sullivan, 11 cases; Vanderburgh, 5; Vigo 2; Wabash, 2; Wayne, 3.

May, 1912.—Seventy-two cases in 19 counties with no deaths. In the preceding month, 141 cases in 25 counties with 2 deaths. In the same month last year, 207 cases in 22 counties with no deaths. The counties reporting cases present were: Benton, 7; Clark, 13; Dearborn, 1; Delaware, 3; Gibson, 5; Greene, 1; Howard, 1; Johnson, 15; Laporte, 1; Madison, 1; Marion, 6; Miami, 1; Montgomery, 1; Pike, 1; Randolph, 1; St. Joseph, 1; Switzerland, 2; Vanderburgh, 1; Wabash, 2.

June, 1912.—Ninety-one cases were reported from 17 counties with 3 deaths. In the corresponding month last year, 90 cases from 16 counties, with 1 death. The following counties reported the disease present: Carroll, Cass, Delaware, Gibson, Grant, Howard, Johnson, Laporte, Madison, Marion, Pike, Ripley, Shelby, St. Joseph, Tipton, Vanderburgh, Wabash, Warrick.

July, 1912.—Thirty cases in 13 counties with no deaths. In the preceding month ninety-one cases in 17 counties with 3 deaths. In the same month last year, 44 cases in 11 counties, with no deaths.

August, 1912.—Eleven cases in five counties with no deaths. In the preceding month, 30 cases in 13 counties with no deaths. In the same month last year, 31 cases in 13 counties with no deaths.

September, 1912.—Four cases reported in 4 counties with no deaths. In the preceding month, 11 cases in 5 counties with no deaths. In the same month last year, 13 cases in 5 counties with no deaths.

October, 1912.—Fifty-two cases with one death in 9 counties. The smallpox death occurred in Greene County, male 12 days old. In the preceding month, 4 cases in 4 counties with no deaths. In the same month last year, 13 cases in 5 counties with no deaths.

November, 1912.—One hundred and seven cases in 13 counties with no deaths. In the preceding month, 52 cases in 9 counties with one death. In the same month last year, 37 cases in 9 counties with no deaths.

December, 1912.—One hundred and eighty-nine cases, with 1 death in 18 counties. The smallpox death occurred in Vanderburgh County, male 23 years. In the preceding month, 107 cases in 13 counties with no deaths. In the same month last year, 113 cases in 11 counties with no deaths.

EXTERNAL CAUSES.

Months	1908.	1909.	1910.	1911.	1912.
January	212	198	197	214	185
February	172	185	179	180	193
March	174	215	263	165	205
April	186	197	200	199	196
May	242	195	188	267	204
June	223	217	243	221	218
July	234	228	273	325	267
August	251	266	251	278	253
September	244	205	241	219	231
October	209	220	207	226	225
November	196	200	214	226	235
December	184	221	234	215	226
Totals	2,527	2,543	2,690	2,735	2,638

	1908.	1909.	1910.	1911.	1912.
Accidents	2,021	2,030	1,902	2,081	2,049
Suicides	384	404	386	443	458
Homicides	122	109	121	123	131

MONTHLY RECORD OF DEATHS FROM EXTERNAL CAUSES.

(As Published in Monthly Bulletin).

January, 1912.—Total, 185. Murders 7; males 4, females 3. Five of the murders were by gunshot; 2 by cyanide of potassium. Suicides 28; males 22, females 6. Methods were: Gunshot, 7; hanging, 4; cutting, 2; carbolic acid, 4; artificial gas, 1; cyanide of potassium, 1; paris green, 1; other poisons, 2. Accidents 145; males 97, females 48. Accidental deaths were caused as follows: Steam railroads, 26; interurbans, 2; street cars, 2; motorcycle, 1. Fracture of femur, 6; machinery, 6; mining, 3; electricity, 1; crushing injuries, 3; burns and scalds, 20; conflagration, 1; drowning, 4; falls, 24; freezing, 2; gunshot, 9; horses and vehicles, 3; poisoned food, 4; and the remainder by various means.

February, 1912.—Total, 187. Murders, 7; males 6, females 1. Suicides, 26; males 20, females 6. Accidents, 154; males 113, females 41. Murders: Methods chosen—gunshot, 3; blunt instruments, 3; strangulation, 1. Suicides: Methods chosen—gunshot, 3; hanging, 4; cutting, 2; carbolic acid, 8; other poisons, 7; burns, 1; artificial gas, 1. Accidental deaths: Steam railroads caused 24; interurbans, 1; street cars, 2; automobiles, 2; crushing injuries, 13; machinery, 4; mining, 2; lightning, 1; burns and scalds, 8;

drowning, 4; falls, 28; gunshots, 2; horses and vehicles, 1; poisons, 2; exposure, 1, and the remainder by various means.

March, 1912.—Total, 199; murders, 8; 6 males and 2 females. Suicides, 30; 23 males and 7 males. Methods chosen were: Gunshot, 2; hanging, 7; cutting throat, 3; gas, 2; carbolic acid, 11; other poisons, 5. Accidental deaths, 161; caused as follows: Railroads, 39; street cars, 1; falls, 40; crushing injuries, 8; machinery, 2; mining, 4; burns and scalds, 16; drowning, 5; gunshot, 4; horses and vehicles, 4; poisons, 4; suffocation and asphyxiation, 12; and the remainder by various means.

April, 1912.—Total, 200. In same month last year, 173. Murders, 7; males 6, females 1. Suicides, 47; males 37, females 10. Accidental deaths, 146; males 97, females 49. Of the murders, 6 were by gunshot and 1 by stabbing. Of the suicides, 11 were by gunshots, 3 artificial gas, 7 hanging, 1 cutting, 3 drowning, 15 carbolic acid, 1 railroad train, 6 other poisons. Of the accidental deaths, railroad trains caused 26, interurbans 1, street cars 4, automobiles 2, machinery 2, electricity 2, falls and crushing injuries 42, burns and scalds 17, drowning 13, gunshot 2, horses and vehicles 6, asphyxiation and suffocation 8, poisons 4, and the remainder by various means.

May, 1912.—Total, 189; 100 of these occurring in the cities and the remainder are rural. Murders, 10; 7 males and 3 females. Methods used were: Gunshot, 7; running over by automobile, 1; struck with hatchet, 1; struck with brick, 1. Suicides, 40; males 29, females 11. Methods used were: Gunshots, 13; cutting throat, 5; hanging, 5; drowning, 3; carbolic acid, 8; other poisons, 3; gas, 1; jumping from moving train, 2. Accidental deaths 139; males 103, females 36. Steam railroads killed 31; interurbans, 7; street cars, 1; automobiles, 2; crushing injuries, 14; machinery, 2; electricity, 2; burns, and scalds, 10; drowning, 12; falls, 24; gunshots, 3; horses and vehicles, 10; poisons, 8; asphyxiation and suffocating, 4; ptomaine poison, 3, and the remainder by various methods.

June, 1912.—Total, 210; rate, 93.8. One hundred and nine of these occurred in the country and 101 in the cities. Murders, 8; 6 males and 2 females. Methods used were: Gunshot, 3; automobile, 1; cutting and stabbing, 2; blow on head, 1; falling, 1. Suicides: 53; 41 males and 12 females. Methods used were: Gunshot, 12; hanging, 6; drowning, 3; carbolic acid, 10; strychnia, 2; other poisons, 16; gas, 1; cutting throat, 1; jumping in front of train, 1; "setting herself on fire," 1. External deaths: 149;

males, 114; females, 35. Steam railroads killed 34; interurbans, 2; street cars, 4; automobiles, 4; motorcycles, 3; machinery, 1; mining, 2; electricity, 3; crushing injuries, 9; burns and scalds, 7; drowning, 26; falls, 27; gunshot, 3; poisons, 5; ptomaine poisoning, 4; lightning, 2; traumatism, 1; tetanus, 2; asphyxiation and suffocation, 4; horses and vehicles, 5; explosion, 1.

July, 1912.—Total, 264. In the preceding month, 210. In the same month last year, 296. Of the deaths in July from external causes, 9 were murders, 38 suicides, 218 accidents. Of the murders, 7 chose gunshots; males, 4; females, 3. Methods used not named, male, 1; female, 1. Of the 38 suicides, 9 chose gunshot; males, 8; female, 1; 9 chose hanging; males, 8; female, 1; 4 chose drowning; males, 3; female, 1; 1 chose strangulation; male, 1; 8 chose carbolic acid; males, 2; females, 6; other methods chosen, 9; males, 6; females, 3. Of the accidental deaths, railroads caused 38; interurubans, 2; streetcars, 5; automobiles, 6; motorcycles, 2; machinery, 3; mining, 3; crushing injuries, 47; burns and scalds, 12; drowning, 45; gunshots, 4; horses and vehicles, 9; electricity, 7; lightning, 5; sunstroke, 2; and the remainder by various methods.

August, 1912.—Total, 247. In the preceding month, 264. In the same month last year, 261. Of the deaths in August from external causes, 9 were murders, 44 suicides, and 193 accidents. Of the murders, 6 male deaths were caused by gunshot; 1 female, drowning; 1 male, blunt instruments, and 1 male, cutting or stabbing. Of the suicides, 6 males chose gunshot, 6 males hanging, 2 males cutting throat; 19 chose carbolic acid, 15 males and 4 females; 8 chose other poisons, 4 males and 4 females; 2 illuminating gas, 1 male and 1 female; stepping in front of train, 1 male. Of the accidental deaths, steam railroads caused 39; interurbans, 4; street cars, 4; automobiles, 3; crushing injuries, 9; mining, 3; machinery, 1; fractures, 16; falls, 20; burns and scalds, 6; drowning, 22; gunshots, 5; electricity, 8; lightning, 4; horses and vehicles, 6; other animals, 1; poisons, 22, and the remainder by various means.

September, 1912.—Total, 229. In the preceding month, 247. In the same month last year, 205. Of the deaths in September from external causes, 13 were murders, 43 suicides, and the remainder accidents. Of the murders, 7 males and 3 females were killed by gunshot; 1 male by blunt instruments; 2 males by stabbing. Of the suicides, 4 males and 2 females chose gunshots; 5 males and 1 female chose hanging; 2 males chose cutting; 6 males and 8 females chose carbolic acid; 5 males and 3 females chose various poisons; 1 male and 1 female chose illuminating gas; 2 males, drowning. Other means, 2 males and 1 female.

Of the accidental deaths, railroads caused 31, interurbans, 5: street cars, 4; automobiles, 4; horses and vehicles, 9; mining, 4; machinery, 3; falls, 33; burns and scalds, 14; drowning, 18; gunshots, 4; electricity, 4; lightning, 1; poisons of various kinds, 8; tetanus, 2, and the remainder by various methods.

October, 1912.—Total deaths 215; males 163 and females 52. Suicides: 28; males 22, females 6. Of the suicides, 19 chose poisons, 1 asphyxia, 3 drowning, 2 firearms, 2 cutting instruments, 1 jumping from high place. Of the remainder of deaths from external causes, 18 were from burns, 6 from deleterious gases, 5 from drowning, 4 from firearms, 31 by falls, 4 from accidents in mines, 4 by machinery, 35 by railroad accidents, 8 by street car accidents, 13 by automobile injuries, 10 by injuries from vehicles other than automobiles, 7 by crushing injuries, 6 by injuries from animals, 2 by electricity.

There were 14 murders, 11 by firearms, 10 males and 1 female; 2 by cutting instruments, both males, and 1 by other means.

November, 1912.—Total deaths 235; males, 191; females, 44. Suicides 29; males, 23; females, 6. Methods chosen were: Poison, 13; hanging, 2; drowning, 2; firearms, 11; and crushing under cars, 1. Murders 17; 13 males and 4 females. Method used: Firearms, 9; cutting or piercing instruments, 4; other means, 4. Accidental deaths 189; males, 155; females, 34. Poisoned by food, 4; burned to death, 17; accidental drowning, 7; firearms, 10; falls, 28; mining accidents, 6; machinery, 15; steam railroads, 58; street cars, 3; automobiles, 5; injuries by animals, 3; electricity, 2; and the remainder by various means.

December, 1912.—Total deaths 221; males 166 and females 55. Suicides 33; males 25 and females 8. Of the suicides, 17 chose poison, 1 asphyxia, 2 hanging, 3 drowning, 7 firearms, 3 cutting and piercing instruments: Murders 7; 4 males and 3 females. Methods used: Firearms 6, cutting or piercing instruments 1.

Accidental deaths, 181; males 137 and females 44. Of the accidental deaths 27 were caused by burns, 13 by deleterious gases, 2 by drowning, 9 by firearms, 18 by falls, 4 mining accidents, railway 47, street cars 9, automobiles 3, other vehicles 8, injuries by animals 2, electricity 2, and the remainder by various means.

CANCER.

	1908.	1909.	1910.	1911.	1912.
January	117	141	145	176	154
February	134	152	133	167	163
March	120	145	165	166	180
April	162	141	167	151	183
May	153	162	162	153	142
June	140	149	157	156	178
July	171	163	154	169	184
August	150	169	165	150	166
September	155	160	157	154	146
October	171	150	159	163	172
November	137	145	152	168	163
December	129	151	156	165	186
Totals	1,739	1,828	1,872	1,938	2,018

MONTHLY ANALYSIS OF DISEASE PREVALENCE.

(As Published in Monthly Bulletin.)

January, 1912.—The most prevalent disease was tonsilitis. This was also true in January, 1911. The order of prevalence of disease was as follows: Tonsilitis, bronchitis, influenza, rheumatism, scarlet fever, lobar pneumonia, bronchial pneumonia, pulmonary tuberculosis, diphtheria, and membraneous croup, typhoid fever, chickenpox, diarrhea, measles, whooping-cought, smallpox, erysipelas, other forms of tuberculosis, inflammation of bowels, intermittent and remittent fever, cholera morbus, malaria fever, dysentery, rabies in animals, cerebro-spinal fever, cholera infantum, puerperal fever, poliomyelitis, rabies in human.

February, 1912.—The most prevalent disease was influenza. Bronchitis, which for three months has been the most prevalent, fell to second place. The order of disease prevalence was as follows: Influenza, bronchitis, tonsilitis, scarlet fever, rheumatism, pneumonia, pulmonary tuberculosis, typhoid fever, diphtheria and membraneous croup, chickenpox, measles, diarrhea, smallpox, tuberculosis, other forms; erysipelas, whooping-cough, puerperal fever, malaria fever, cholera morbus, intermittent and remittent fever, rabies in animals, inflammation of the bowels, cholera infantum, rabies in human, cerebro-spinal fever, poliomyelitis, dysentery.

March, 1912.—The most prevalent disease was scarlet fever, 62 per cent. of the observers reporting it to be present. Tonsilitis stood second and it stood third in February. The order of disease prevalence was as follows: Scarlet fever, tonsilitis, influenza, bronchitis, lobar pneumonia, rheumatism, pulmonary tuberculosis, diphtheria and membraneous croup, bronchial pneumonia, measles, typhoid fever, chickenpox, small-pox, diarrhea, whooping-cough, tuberculosis, other forms, erysipelas, intermittent and remittent fever, malaria fever, inflammation of bowels, cholera morbus, rabies in animals, dysentery, poliomyelitis, rabies in human, cerebro-spinal fever, puerperal fever, cholera infantum.

April, 1912.—As in March, scarlet fever was reported as the most prevalent infectious disease; 62 per cent. of the observers reported it present, and this also was true of rheumatism. The order of prevalence was as follows: Scarlet fever, rheumatism, tonsilitis, bronchitis, measles, pulmonary tuberculosis, influenza, lobar pneumonia, diphtheria and membraneous croup, bronchial pneumonia, typhoid fever, smallpox, chickenpox, diarrhea, eysipelas, whooping-cough, intermittent and remittent fever, malaria fever, other forms of tuberculosis, dysentery, puerperal fever, rabies in animals, inflammation of bowels, cholera morbus, rabies in human, cerebro-spinal fever, cholera infantum, poliomyelitis.

May, 1912.—Rheumatism was reported as the most prevalent disease. In the preceding month scarlet fever was reported as most prevalent. The order of prevalence was as follows: Rheumatism, tonsilitis, bronchitis, measles, scarlet fever pulmonary tuberculosis, typhoid fever, whooping cough, diarrhea, influenza, diphtheria and membraneous croup, bronchial pneumonia, lobar pneumonia, smallpox, malaria fever, chickenpox, erysipelas, cholera morbus, intermittent and remittent fever, tuberculosis, other forms, inflammation of bowels, rabies in animals, dysentery, puerperal fever, cholera infantum, rabies in human, cerebro-spinal fever, poliomyelitis.

June, 1912.—Rheumatism was the most prevalent disease. Following is the order of prevalence: Rheumatism, tonsilitis, pulmonary tuberculosis, typhoid fever, diarrhea, bronchitis, measles, scarlet fever, whooping cough, cholera morbus, diphtheria, malarial fever, smallpox, intermittent fever, cholera infantum, influenza, lobar pneumonia, inflammation of bowels, dysentery, erysipelas, bronchial pneumonia, tuberculosis other forms, rabies in human, chickenpox, rabies in animals, puerperal fever, cerebro-spinal fever, and poliomyelitis.

July, 1913.—Typhoid fever was reported as the most prevalent infectious disease. Sixty-three observers reported the disease present against 50 last month. The order of prevalence was as follows: Typhoid fever, diarrhea, rheumatism, tonsilitis, bronchitis, pulmonary tuberculosis, cholera morbus, cholera infantum, dysentery, scarlet fever, malaria fever, measles, diphtheria and membraneous croup, whooping cough, intermittent and remittent fever, inflammation of bowels, other forms of tuberculosis, lobar pneumonia, smallpox, chickenpox, influenza, bronchial pneumonia, puerperal fever, poliomyelitis, rabies in human, cerebro-spinal fever, erysipelas, rabies in animals.

August, 1912.—Typhoid fever was reported as the most prevalent infectious disease. This was also true in July. The order of prevalence was as follows: Typhoid fever, diarrhea, tonsilitis, cholera infantum, cholera morbus, rheumatism, pulmonary tuberculosis, bronchitis, diphtheria and membranous croup, dysentery, scarlet fever, malaria fever, intermittent and remittent fever, inflammation of bowels, poliomyelitis, measles, lobar pneumonia, whooping cough, influenza, bronchial pneumonia, tuberculosis (other forms), chickenpox, cerebro-spinal fever, puerperal fever, rabies in human, rabies in animals.

September, 1912.—Typhoid fever, as in the previous month, was reported as the most prevalent infectious disease. Eighty-three per cent. of observers reported the disease present, as against 81 in the preceding month. The order of prevalence was as follows: Typhoid fever, diphtheria, tonsilitis, bronchitis, rheumatism, diarrhea, scarlet fever, pulmonary tuberculosis, dysentery, malaria fever, cholera infantum, cholera morbus, influenza, intermittent and remittent fever, whooping cough, inflammation of bowels, poliomyelitis, tuberculosis other forms, broncho-pneumonia, lobar pneumonia, chickenpox, erysipelas, measles, cerebro-spinal fever, puerperal fever, smallpox, rabies in animals, rabies in human.

October, 1912.—Typhoid fever, as in the previous month, was reported the most prevalent infectious disease. Seventy-five per cent. of observers reported the disease present as against 83 in the preceding month. The order of prevalence was as follows: Typhoid fever, diphtheria, tonsilitis, rheumatism, bronchitis, scarlet fever, pulmonary tuberculosis, diarrhea, influenza, lobar pneumonia, malaria fever, whooping cough, measles, chickenpox, poliomyelitis, dysentery, tuberculosis, other forms, erysipelas, smallpox, cholera infantum, puerperal fever, inflammation of bowels, cerebro-spinal fever, cholera morbus, rabies in human, rabies in animals, Duke's disease.

November, 1912.—Diphtheria was reported as the most prevalent disease during the month. Seventy-one per cent. of observers reported the disease present. The order of prevalence was as follows: Diphtheria and membranous croup, typhoid fever, bronchitis, scarlet fever, tonsilitis, rheumatism, influenza, pulmonary tuberculosis, lobar pneumonia, bronchial pneumonia, chickenpox, measles, tuberculosis, other forms, whooping cought, intermittent and remittent fever, malaria fever, diarrhea, smallpox, erysipelas, dysentery, poliomyelitis, rabies in human, cholera infantum, inflammation of bowels, puerperal fever, cerebro-spinal fever, cholera morbus, rabies in animals.

December, 1912.—Diphtheria, as in the previous month, was reported as the most prevalent infectious disease. Sixty-seven per cent. of observers reported the disease present, as against 71 in the preceding month. The order of prevalence was as follows: Diphtheria and croup, tonsilitis, influenza, scarlet fever, acute bronchitis, acute rheumatism, bronchial pneumonia, pulmonary tuberculosis, lobar pneumonia, typhoid fever, chickenpox, whooping cough, measles, diarrhea and enteritis, smallpox, intermittent and remittent fever, erysipelas, other forms of tuberculosis, malarial fever, dysentery, poliomyelitis, rabies in human, cholera morbus, puerperal fever, cerebro-spinal fever, rabies in animals.

TABLES

OF

ANNUAL STATISTICAL REPORT

FOR THE YEAR 1912.

TABLE No. 1.

Deaths in Indiana, During the Year Ending December 31, 1912, with Rates per 100,000 Population According to the U. S. Census of 1912.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
	I. General Diseases.		
1	Typhoid fever	652	23.8
2	Typhus fever	......	......
3	Relapsing fever	......	......
4	Malaria	98	3.5
5	Smallpox	12	.4
6	Measles	73	2.6
7	Scarlet fever	113	4.1
8	Whooping-cough	255	9.3
9	Diphtheria	518	18.9
10	Influenza	420	15.3
11	Miliary fever	......	......
12	Asiatic cholera	......	......
13	Cholera nostras	15	.5
14	Dysentery	172	6.2
15	Plague	......	......
16	Yellow fever	......	......
17	Leprosy	1	.03
18	Erysipelas	98	3.5
19	Other epidemic diseases	12	.4
20	Purulent infection and septicemia	60	2.1
21	Glanders	......	......
22	Anthrax	......	......
23	Rabies	2	.04
24	Tetanus	25	.9
25	Mycoses	2	.04
26	Pellagra	2	.04
27	Beriberi	......	......
28	Tuberculosis of the lungs	3,364	123.2
29	Acute miliary tuberculosis	55	2.0
30	Tuberculous meningitis	199	7.2
31	Abdominal tuberculosis	248	9.0
32	Pott's disease	21	.7
33	White swellings	21	.7
34	Tuberculosis of other organs	80	2.9
35	Disseminated tuberculosis	60	2.1

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
36	Rickets	25	.9
37	Syphilis	142	5.2
38	Gonococcus infection	3	.1
39	Cancer of the buccal cavity	73	2.6
40	Cancer of the stomach and liver	854	31.2
41	Cancer of the peritonaeum, intestines and rectum	210	7.6
42	Cancer of the female genital organs	322	11.7
43	Cancer of the breast	189	6.9
44	Cancer of the skin	131	4.7
45	Cancer of other organs and organs not specified	239	8.7
46	Other tumors (tumors of the female genital organs excepted)	18	.6
47	Acute articular rheumatism	174	6.3
48	Chronic rheumatism and gout	39	1.4
49	Scurvy	2	.04
50	Diabetes	429	15.7
51	Exophthalmic goitre	47	1.7
52	Addison's disease	12	.4
53	Leuchaemia	37	1.3
54	Anemia, chlorosis	126	4.6
55	Other general diseases	39	1.4
56	Alcoholism (acute or chronic)	103	3.7
57	Chronic lead poisoning	7	.2
58	Other chronic occupation poisonings	....	....
59	Other chronic poisonings	19	.6
	II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSES.		
60	Encephalitis	37	1.3
61a	Simple meningitis	82	3.0
61b	Cerebrospinal meningitis (undefined)	20	.7
61c	Cerebrospinal fever	36	1.3
62	Locomotor ataxia	73	2.6
63a	Acute anterior poliomyelitis	47	1.7
63b	Other diseases of the spinal cord	156	5.7
64	Cerebral hemorrhage, apoplexy	2,056	75.2
65	Softening of the brain	55	2.0
66	Paralysis without specified cause	297	10 8
67	General paralysis of the insane	173	6.3
68	Other forms of mental alienation	61	2.2
69	Epilepsy	162	5.9
70	Convulsions (nonpuerperal)	....	....
71	Convulsions of infants	35	1.2
72	Chorea	4	.1
73	Neuralgia and neuritis	17	.6
74	Other diseases of the nervous system	66	2.4
75	Disease of the eyes and their adnexa	4	.1
76	Diseases of the ears	44	1.6
	III. DISEASES OF THE CIRCULATORY SYSTEM.		
77	Pericarditis	47	1.7
78	Acute endocarditis	114	4.1
79	Organic diseases of the heart	4,419	161.8
80	Angina pectoris	345	12.6
81	Diseases of the arteries, atheroma, aneurysm, etc	649	23.7
82	Embolism and thrombosis	77	2.8
83	Diseases of the veins (Varices, hemorrhoids, phlebitis, etc.)	14	.5
84	Diseases of the lymphatic system (lymphangitis, etc.)	12	.4
85	Hemorrhage; other diseases of the circulatory system	14	.5

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
	IV. DISEASES OF THE RESPIRATORY SYSTEM.		
86	Diseases of the nasal fossae	10	.3
87	Diseases of the larynx	42	1.5
88	Disease of the thyroid body	13	4
89	Acute bronchitis	246	9.0
90	Chronic bronchitis	232	8.4
91	Broncho pneumonia	1,092	39.9
92a	Lobar pneumonia	1,021	37.3
92b	Pneumonia (undefined)	725	26.5
93	Pleurisy	57	2.0
94	Pulmonary congestion, pulmonary apoplexy	36	1.3
95	Gangrene of the lung	6	.2
96	Asthma	85	3.1
97	Pulmonary emphysema	14	.5
98	Other diseases of the respiratory system (tuberculosis excepted)	33	1.2
	V. DISEASES OF THE DIGESTIVE SYSTEM.		
99	Diseases of the mouth and adnexa	26	.9
100	Diseases of the pharynx	29	1.0
101	Diseases of the esophagus	2	.04
102	Ulcer of the stomach	112	4.1
103	Other diseases of the stomach (cancer excepted)	546	20.0
104	Diarrhoea and enteritis (under two years)	1,625	59.5
105	Diarrhoea and enteritis (two years and over)	566	20.7
106	Ankylostomiasis	....	....
107	Intestinal parasites	1	.03
108	Appendicitis and typhlitis	316	11.5
109a	Hernia	81	2.9
109b	Intestinal obstruction	264	9.6
110	Other diseases of the intestines	69	2.5
111	Acute yellow atrophy of the liver	14	.5
112	Hydatid tumor of the liver	2	.07
113	Cirrhosis of the liver	309	11.3
114	Biliary calculi	127	4.6
115	Other diseases of the liver	150	5.8
116	Diseases of the spleen	9	.3
117	Simple peritonitis (nonpuerperal)	32	1.1
118	Other diseases of the digestive system (cancer and tuberculosis excepted)	18	.6
	VI. NONVENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA.		
119	Acute nephritis	259	9.4
120	Bright's disease	2,184	79.9
121	Chyluria	1	.03
122	Other diseases of the kidneys and adnexa	61	2.2
123	Calculi of the urinary passages	26	.9
124	Diseases of the bladder	88	3.1
125	Disease of the urethra, urinary abscess, etc	10	.3
126	Diseases of the prostate	130	4.7
127	Nonvenereal diseases of the male genital organs	6	.2
128	Uterine hemorrhage (nonpuerperal)	4	.1
129	Uterine tumor (noncancerous)	41	1.5
130	Other diseases of the uterus	19	.6
131	Cysts and other tumors of the ovary	34	1.2
132	Salpingitis and other diseases of the female genital organs	52	1.9
133	Nonpuerperal diseases of the breast (cancer excepted)	....	....

TABLE No. 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
	VII. THE PUERPERAL STATE.		
134	Accidents of pregnancy	40	1.4
135	Puerperal hemorrhage	32	1.1
136	Other accidents of labor	34	1.2
137	Puerperal septicemia	231	8.4
138	Puerperal albuminuria and convulsions	88	3.2
139	Puerperal phlegmasia, alba dolens, embolus, sudden death	11	.4
140	Following childbirth (not otherwise defined)	14	.5
141	Puerperal diseases of the breast	....	....
	VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.		
142	Gangrene	80	2.9
143	Furuncle	10	.3
144	Acute abscess	15	.5
145	Other diseases of the skin and adnexa	16	.5
146	Diseases of the bones (tuberculosis excepted)	55	2.0
147	Diseases of the joints (tuberculosis and rheumatism excepted)	3	.1
148	Amputations	....	....
149	Other diseases of the organs of locomotion	1	.03
	X. MALFORMATIONS.		
150a	Hydrocephalus	39	1.4
150b	Congenital malformation of the heart	291	10.6
150c	Other congenital malformation	133	4.8
	XI. EARLY INFANCY.		
151a	Premature birth	1,174	42.9
151b	Congenital debility, atrophy, marasmus, etc	199	7.2
152a	Injuries at birth	195	7.1
152b	Other causes peculiar to early infancy	177	6.4
153	Lack of care	3	.1
	XII. OLD AGE.		
154	Senility	385	14.1
	XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.		
155	Suicide by poison	222	8.1
156	Suicide by asphyxia	18	.6
157	Suicide by hanging or strangulation	63	2.3
158	Suicide by drowning	18	.6
159	Suicide by firearms	101	3.6
160	Suicide by cutting or piercing instruments	26	.9
161	Suicide by jumping from high places	1	.03
162	Suicide by crushing	6	.2
163	Other suicides	3	.1
164	Poisoning by food	47	1.7
165	Other acute poisonings	68	2.4
166	Conflagration	15	.5
167	Burns (conflagration excepted)	184	6.7
168	Absorption of deleterious gases (conflagration excepted)	80	2.9
169	Accidental drowning	185	6.7
170	Traumatism by firearms	59	2.1
171	Traumatism by cutting or piercing instruments	17	.6
172	Traumatism by fall	452	16.5
173a	Traumatism in mines	43	1.5
173b	Traumatism in quarries	....	....

TABLE No. 1—Concluded.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
174	Traumatism by machines	57	2.0
175a	Railroad accidents and injuries	445	16.3
175b	Street car accidents and injuries	87	3.1
175c	Automobile accidents and injuries	48	1.7
175d	Injuries by other vehicles	68	2.4
175e	Other crushing	60	2.1
176	Injuries by animals	50	1.8
177	Starvation	2	.07
178	Excessive cold	11	.4
179	Effects of heat	18	.6
180	Lightning	15	.5
181	Electricity (lightning excepted)	38	1.3
182	Homicide by firearms	86	3.1
183	Homicide by cutting or piercing instruments	14	.5
184	Homicide by other means	31	1.1
185	Fractures (cause not specified)	3	.1
186	Other external violence	305	11.1
	XIV. Ill Defined Diseases.		
187	Ill defined organic disease	1	.03
188	Sudden death	1	.03
189a	Ill defined	9	.3
189b	Not specified or unknown	20	.7
	Total deaths from all causes	35,771	1,310.0

TABLE No. 2.

Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Condition, for the Year Ending December 31, 1912. International Classification.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
I. GENERAL DISEASES	841	898	950	906	743	699	717	747	760	867	813	877
Typhoid fever	29	42	42	33	35	30	33	70	102	109	81	46
Typhus fever												
Relapsing fever												
Malaria	4	2		6	4	14	9	15	14	17	9	4
Smallpox		2	3	2		3				1		1
6. Measles	0	5	7	14	12	11	7	3	1		1	3
7. Scarlet fever	7	14	7	15	4	4	4	5	5	10	14	24
8. Whooping cough	18	21	27	26	21	32	25	21	16	14	18	16
9. Diptheria and croup	25	29	25	19	19	7	10	25	68	107	106	78
10. Influenza	72	98	74	46	9	7	5	1	6	11	18	73
11. Miliary fever												
12. Asiatic cholera												
13. Cholera nostras						1	3	4	7			
14. Dysentery	3	4	5	4	4	6	23	51	38	23	8	3
15. Plague												
16. Yellow fever												
17. Leprosy			1									
18. Erysipelas	12	16	17	9	2	5	5	4	4	7	12	5
19. Other epidemic diseases	3	1	1	1		1	2			1	1	1
20. Purulent infection and septicemia	7	4	3	8	7	3	2	5	5	5	7	4
21. Glanders												
22. Anthrax												
23. Rabies		1							1			
24. Tetanus	1	1		3	1	1	1		6	8	2	1
25. Mycoses											2	

TABLE No. 2—Continued.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
26. Pellagra	......	......	......	......	......	......	......	1	1	......	......	......
27. Beriberi	......	......	......	......	......	......	......	......	......	......	......	......
28. Tuberculosis of the lungs	318	333	385	321	322	252	270	244	196	234	226	263
29. Acute miliary tuberculosis	2	5	4	6	5	1	6	3	4	3	8	8
30. Tuberculosis meningitis	22	12	30	18	19	18	14	10	15	12	17	12
31. Abdominal tuberculosis	18	21	15	26	19	21	16	13	36	28	24	11
32. Pott's disease	3	1	4	3	1	......	1	1	1	3	1	2
33. White swellings	1	1	4	2	2	1	4	1	1	2	......	2
34. Tuberculosis of other organs	9	10	3	15	4	5	3	6	9	7	3	6
35. Disseminated tuberculosis	3	5	7	6	3	5	4	8	7	4	1	7
36. Rickets	1	3	1	1	3	3	2	......	4	2	2	3
37. Syphilis	12	11	10	12	9	7	11	17	9	14	15	15
38. Gonococcus infection	......	......	......	1	......	......	......	2	......	......	......	......
39. Cancer of the buccal cavity	8	8	9	5	1	9	7	7	6	3	6	4
40. Cancer of the stomach, liver	68	70	68	79	56	67	83	71	61	74	74	83
41. Cancer of the peritonaeum, intestines, rectum	13	15	15	18	10	25	21	15	11	24	18	25
42. Cancer of the female genital organs	21	30	30	27	26	26	29	23	24	30	26	30
43. Cancer of the breast	16	13	19	20	13	13	14	22	16	13	12	18
44. Cancer of the skin	11	11	7	12	14	17	10	9	7	10	11	12
45. Cancer of other organs and organs not specified	17	17	32	22	22	21	20	19	21	18	16	14
46. Other tumors (tumors of the female genital organs excepted)	......	3	4	......	1	1	1	1	......	1	......	6
47. Acute articular rheumatism	22	21	16	29	17	13	11	4	3	9	12	17
48. Chronic rheumatism and gout	8	2	4	2	6	1	4	4	1	1	3	3
49. Scurvy	1	......	......	......	......	......	......	1	......	......	......	......
50. Diabetes	47	42	34	55	36	30	26	22	19	35	34	49
51. Exophthalmic goitre	5	1	6	1	5	4	3	5	3	3	4	7
52. Addison's disease	1	......	1	......	......	2	1	3	1	1	1	1
53. Leuchaemia	1	3	1	4	4	4	3	1	6	6	1	3
54. Anemia, chlorosis	10	11	9	15	21	10	12	16	10	4	5	3
55. Other general diseases	6	......	10	2	2	5	2	3	1	4	1	3
56. Alcoholism (acute or chronic)	6	8	10	15	4	10	7	8	6	8	11	10
57. Chronic lead poisoning	1	......	......	1	......	2	1	......	2	......	......	......
58. Other chronic occupation poisonings	......	......	......	......	......	......	......	......	......	......	......	......
59. Other chronic poisonings	......	1	......	2	......	1	2	3	6	1	2	1

II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSES.	324	296	344	307	281	247	260	268	241	258	253	346
60. Encephalitis	7	4	2	1	2		2	6	3	2	5	3
61. Meningitis												
A. Simple meningitis	4	17	12	8	7	8	4	6	2	7	4	3
B. Cerebrospinal meningitis (undefined)	5	1	1	3		2	1	1	1	5		
C. Cerebrospinal fever		3	5	4	2	2		3	5	5	3	4
62. Locomotor ataxia	13	5	7	10	3	2	9	3	6	3	4	8
63. Other diseases of the spinal cord												
A. Acute anterior poliomyelitis	4		3	1	1	1	3	9	9	6	4	6
B. Other diseases of the spinal cord	19	10	11	10	18	12	17	12	6	11	12	18
64. Cerebral hemorrhage, apoplexy	188	169	220	173	183	166	154	152	137	153	154	207
65. Softening of the brain	7	2	3	7	3	2	4	7	5	5	4	6
66. Paralysis without specified cause	29	27	31	27	17	15	25	27	25	27	19	28
67. General paralysis of the insane	19	14	11	16	12	11	7	11	17	16	19	20
68. Other forms of mental alienation	4	6	4	5	5	2	8	5	5	1	8	8
69. Epilepsy	8	17	16	21	14	16	13	13	8	6	11	19
70. Convulsions (nonpuerperal)												
71. Convulsions of infants	5	2	3	3	3	2	3	4	3	3	1	3
72. Chorea	2			1					1			
73. Neuralgia and neuritis		3	4	2	1			2	1			4
74. Other diseases of the nervous system	8	7	5	7	6	2	8	4	4	6	5	4
75. Diseases of the eyes and their annexa			1	1				1	1			
76. Diseases of the ears	2	9	5	7	4	4	2	2	2	2		5
III. DISEASES OF THE CIRCULATORY SYSTEM.	523	488	569	520	473	449	416	428	409	459	426	531
77. Pericarditis	3	5	2	10	5	2	3	5	1	2	4	5
78. Acute Endocarditis	8	9	7	5	12	11	16	11	7	13	8	7
79. Organic diseases of the heart	419	383	464	407	360	352	316	311	327	344	330	406
80. Angina pectoris	34	27	30	31	35	18	30	25	21	31	18	45
81. Diseases of the arteries, atheroma, aneurysm, etc	52	53	56	51	50	59	36	68	44	62	57	61
82. Embolism and thrombosis	5	8	6	10	5	6	9	5	5	6	7	5
83. Diseases of the veins (varices, hemorrhoids, phlebitis etc)		1	2	2	2	1	1	1	2		1	
84. Diseases of the lymphatic system (lymphangitis etc.)	1	1		1	2		3	1			1	2
85. Hemorrhage; other diseases of the circulatory system	1	1	2	2	2		2	1	2	1		

TABLE No. 2—Continued.

		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	IV. DISEASES OF THE RESPIRATORY SYSTEM.	576	501	526	389	216	102	96	121	133	233	281	438
86.	Diseases of the nasal fossae	1	1	2	3			1					2
87.	Diseases of the larynx	6	6	2	5	2		1	1	1	4	8	6
88.	Diseases of the thyroid body	1	1			5	3		1		1	1	
89.	Acute bronchitis	35	27	34	24	18	6	8	7	8	22	21	36
90.	Chronic bronchitis	26	25	24	17	17	14	12	13	11	14	26	33
91.	Broncho pneumonia	170	159	160	123	65	29	27	35	44	84	87	109
92.	Pneumonia												
	A. Lobar pneumonia	180	143	173	129	46	16	14	27	36	51	74	132
	B. Pneumonia (undefined)	133	111	108	71	43	26	19	19	13	32	49	101
93.	Pleurisy	5	4	9	6	4	4	4	5	3	7	4	2
94.	Pulmonary congestion, pulmonary apoplexy	2	3	2	3	3		5		4	7	2	5
95.	Gangrene of the lung		1	2					1		2		
96.	Asthma	13	13	8	5	7	3	3	8	9	6	3	7
97.	Pulmonary emphysema	3	3	2			1					3	2
98.	Other diseases of the respiratory system (tuberculosis excepted)	1	4		3	6		2	4	4	3	3	3
	V. DISEASES OF THE DIGESTIVE SYSTEM.	246	216	282	268	261	247	509	689	664	444	259	222
99.	Diseases of the mouth and annexa	1		2	6	2	2	2	5	2	1	1	2
100.	Diseases of the pharynx	1	1	4	1	3		4	3	6		2	4
101.	Diseases of the esophagus	1									1		
102.	Ulcer of the stomach	9	8	13	11	9	11	6	6	10	12	12	5
103.	Other diseases of the stomach (cancer excepted)	51	26	42	46	45	46	46	56	57	53	43	35
104.	Diarrhea and enteritis (under 2 years)	50	45	50	53	45	57	272	376	360	215	68	34
105.	Diarrhea and enteritis (2 years and over)	25	34	35	27	29	29	66	112	102	56	30	21
106.	Ankylostomiasis												
107.	Intestinal parasites								1				
108.	Appendicitis and typhlitis	25	17	25	28	26	20	32	39	30	26	22	26
109.	Hernia, intestinal obstruction												
	A. Hernia	5	10	5	8	9	8	3	4	7	6	5	11
	B. Intestinal obstruction	18	15	24	24	17	18	27	28	28	28	20	17
110.	Other diseases of the intestines	5	6	4	11	7	8	5	2	5	5	5	6
111.	Acute yellow atrophy of the liver	2		2		1	4	1				1	3

112.	Hydatid tumor of the liver		1									1	
113.	Cirrhosis of the liver	34	21	27	23	28	29	21	27	28	21	23	27
114.	Biliary calculi	3	8	16	12	19	4	8	8	9	9	14	17
115.	Other diseases of the liver	12	16	28	8	14	9	12	13	15	10	9	13
116.	Diseases of the spleen	1	2		1	2			1	1			1
117.	Simple peritonitis (nonpuerperal)	1	5	5	5	1	2	2	6	2	1	2	
118.	Other diseases of the digestive system (cancer and tuberculosis excepted)	2	1		4	4		2	2	2		1	
	VI. NONVENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA.	266	223	276	266	251	216	198	214	232	233	266	274
119.	Acute nephritis	25	25	22	17	23	22	17	25	23	20	19	21
120.	Bright's disease	196	164	206	198	198	167	148	158	168	160	206	215
121.	Chyluria		1										
122.	Other diseases of the kidneys and annexa	6		2	6	4	4	7	5	4	9	7	7
123.	Calculi of the urinary passages		4	1	1	4		3	1	3	3	5	1
124.	Diseases of the bladder	10	7	13	8	9	6	6	6	7	7	6	3
125.	Disease of the urethra, urinary abscess, etc		1		1	1		3			1		3
126.	Diseases of the prostate	12	12	18	14	6	6	6	8	12	21	7	8
127.	Nonvenereal diseases of the male genital organs	1			2			1	1		1		
128.	Uterine Hemorrhage (nonpuerperal)	1			1			1				1	
129.	Uterine tumor (noncancerous)	3	3	5	6	2	2	3	2	3	4	5	3
130.	Other diseases of the uterus	1		1	4	2	4	1	1	3		1	1
131.	Cysts and other tumors of the ovary	4	4	3	3	1	2		5	3	3	1	5
132.	Salpingitis and other diseases of the female genital organs	7	2	5	5	1	3	2	2	6	4	8	7
133.	Nonpuerperal diseases of the breast (cancer excepted)												
	VII. THE PUERPERAL STATE.	55	45	43	63	41	36	36	19	34	28	26	24
134.	Accidents of pregnancy	4	4	6	6	2	5	2	4	3	1		3
135.	Puerperal hemorrhage	5	2	4	2	3	5	2	2	2	1	3	1
136.	Other accidents of labor	3	3	6	7	3	4	2	1	3	2		
137.	Puerperal septicemia	27	31	17	32	26	6	23	9	18	16	12	14
138.	Puerperal albuminuria and convulsions	12	4	10	12	7	11	7	1	8	4	8	4
139.	Puerperal phlegmasia, alba dolens, embolus, sudden death	2					3		2		2	1	1
140.	Following childbirth (not otherwise defined)	2	1		4		2				2	2	1
141.	Puerperal diseases of the breast												
	VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.	12	9	14	12	10	8	9	7	8	21	4	7
142.	Gangrene	10	7	12	9	7	3	8	4	4	11	1	4
143.	Furuncle		1			1	2		1	2	2		1
144.	Acute abscess		1	1	3	1			1	1	3	3	1
145.	Other diseases of the skin and annexa	2		1		1	3	1	1	1	5		1

TABLE No. 2—Continued.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
IX. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.	7	4	7	7	7	5	3	6	5	1	4	3
146.* Diseases of the bones (tuberculosis excepted)	6	4	6	7	7	5	3	6	5	1	3	2
147.§ Diseases of the joints (tuberculosis and rheumatism excepted)	1		1									1
148. Amputations												
149. Other diseases of the organs of locomotion											1	
X. MALFORMATIONS.	49	53	47	48	45	26	26	42	22	32	36	37
150. Congenital malformations (stillbirth not included)												
A. Hydrocephalus	2	8	4	2		1	4	6	1	5	5	1
B. Congenital malformation of the heart	33	30	31	35	25	18	16	22	12	18	23	28
C. Other congenital malformations	14	15	12	11	20	7	6	14	9	9	8	8
XI. EARLY INFANCY.	176	142	163	158	134	134	138	153	140	123	135	152
151. Congenital debility, icterus and sclerema												
A. Premature birth	108	87	111	110	92	96	95	113	86	74	95	107
B. Congenital debility, atrophy, marasmus, etc	23	20	18	19	17	12	13	9	17	22	12	17
152. Other causes peculiar to early infancy												
A. Injuries at birth	27	17	18	13	12	13	16	14	19	13	17	16
B. Other causes peculiar to early infancy	18	17	16	16	13	13	14	17	16	14	11	12
153. Lack of care		1							2			
XII. OLD AGE.												
154. Senility	46	35	39	35	21	27	25	26	34	31	36	30
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.	190	201	218	217	209	221	274	263	224	231	242	256
155. Suicide by poison	11	14	17	22	12	29	15	27	23	22	12	18
156. Suicide by asphyxia	2	1	2	3	2	1	1	2	2	1		1
157. Suicide by hanging or strangulation	7	3	6	7	4	6	11	6	7		3	3
158. Suicide by drowning			2	2	3	3	3		1	2	1	1
159. Suicide by firearms	7	7	4	11	16	12	9	6	6	4	12	7
160. Suicide by cutting or piercing instruments	2	2	3	3	5	1	1	2	2	2		3
161. Suicide by jumping from high places										1		
162. Suicide by crushing				1	1	1	1	1			1	
163. Other suicides		1				1						1
164. Poisoning by food	3	1	4	1	4	4	6	8	5	5	3	3

165. Other acute poisonings	6	4	5	5	7	6	7	14	4	2	3	5
166. Conflagration	1		2	1		1	1	1	3	1	4	
167. Burns (conflagration excepted)	24	15	16	19	9	6	10	8	13	21	15	28
168. Absorption of deleterious gases (conflagration excepted)	14	10	10	3	2	3	2	5	5	6	4	16
169. Accidental drowning	4	6	9	15	13	28	49	24	21	6	7	3
170. Traumatism by firearms	10	1	4	1	3	1	5	6	4	4	10	10
171. Traumatism by cutting or piercing instruments	2	1	2	2	3	2		2	1	1		1
172. Traumatism by fall	30	64	51	35	35	32	38	38	36	31	31	31
173. Traumatism in mines and quarries												
A. Traumatism in mines	4	3	4	1	1	3	4	3	4	5	6	5
B. Traumatism in quarries												
174. Traumatism by machinery	6	5	2	2	3	1	4	4	5	6	15	4
175. Traumatism by other crushing												
A. Railroad accidents and injuries	28	27	43	30	31	30	39	39	24	32	57	65
B. Street car accidents and injuries	2	3	2	7	9	5	10	14	9	9	5	12
C. Automobile accidents and injuries		2	2	1	4	4	8	3	3	13	5	3
D. Injuries by other vehicles	1	2	3	2	4	11	6	7	4	11	6	11
E. Landslide and other crushing	3	4	5	5	4	1	3	7	6	10	5	7
176. Injuries by animals	3		2	6	8	4	9	2	5	6	3	2
177. Starvation					1		1					
178. Excessive cold	2	4	1	1						2	1	
179. Effects of heat	1			1	1	2	4	2	6	1		
180. Lightning		1		3		2	4	4			1	
181. Electricity (lightning excepted)	1	1		2	3	3	7	9	5	3	2	2
182. Homicide by firearms	6	4	6	6	7	6	8	5	10	11	11	6
183. Homicide by cutting or piercing instruments				1	1	2		1	2	2	4	1
184. Homicide by other means	2	5	3	1	5	3	1	4	1	4	2	
185. Fractures (cause not specified)		1		1		1						
186. Other external violence	8	9	8	16	8	6	7	9	7	7	13	7
XIV. ILL DEFINED DISEASES.	2		6	3	3	3	1	2	2	3	4	2
187. Ill defined organic disease										1		
188. Sudden death	1											
189. Ill defined or nonspecified												
A. Ill defined	1		2		2				1		2	1
B. Not specified or unknown			4	3	1	3	1	2	1	2	2	1

TABLE No. 2—Continued.

Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Relation for the Year Ending December 31, 1912. International Classification.

	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
I. GENERAL DISEASES.	525	277	188	131	111	1,232	389	269	440	688	725	601	527	533	486	556	610	581	708
1. Typhoid fever	4	10	11	10	7	42	49	53	97	78	63	55	44	41	30	24	19	20	15
2. Typhus fever																			
3. Relapsing fever																			
4. Malaria	7	5	6	3	4	25	6	6	3	4	5	2		3	2	4	7	5	3
5. Smallpox	3					3			1	1	1	3	1		1		1		
6. Measles	10	18	6	5	1	40	9	5	2	3	1	4	2	2	2		2		
7. Scarlet fever	5	14	12	16	10	57	29	11	5	2	6	1	1		1				
8. Whooping cough	153	52	20	9	9	243	9	1	1										
9. Diphtheria and croup	23	61	63	55	52	254	167	52	11	14	7	7	3	2					
10. Influenza	33	10	7	2	4	56	9	3	7	8	7	7	9	8	7	22	14	24	45
11. Miliary fever																			
12. Asiatic cholera																			
13. Cholera nostras	4	3				7	1	1									1		
14. Dysentery			5	2		7			2	2	1	3	2		8	2	5	5	21
15. Plague																			
16. Yellow fever																			
17. Leprosy																			
18. Erysipelas	37	2			1	40	2	2	1		2	3	2	4	3	6	5	5	6
19. Other epidemic diseases	6	1	1		1	9		3											
20. Purulent infection and septicemia	5	1	3		1	10	2	2	2	3	2	3	2	3	3	2	8	3	4
21. Glanders																			
22. Anthrax																			
23. Rabies										1							1		
24. Tetanus	12		1			13	1	4			4	2							
25. Mycoses															1	1			

26.	Pellagra	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......	......	......	1
27.	Beriberi	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
28.	Tuberculosis of the lungs	53	32	16	7	4	112	29	57	229	451	507	370	301	252	186	183	147	141	160
29.	Acute miliary tuberculosis	2	1	1	3	2	9	3	2	7	8	6	4	4	2	4	3	2	......	......
30.	Tuberculosis meningitis	53	24	21	10	7	115	24	10	5	14	9	4	7	5	......	2	......	2	2
31.	Abdominal tuberculosis	22	12	4	4	1	43	4	11	15	21	14	19	14	14	12	14	12	16	20
32.	Pott's disease	2	1	......	......	......	3	2	1	2	......	2	3	1	3	......	1	1	......	1
33.	White swellings	......	......	1	......	......	1	2	2	2	3	2	1	......	......	......	1	......	1	2
34.	Tuberculosis of other organs	6	5	2	......	......	13	2	3	4	7	3	4	6	5	2	7	7	5	2
35.	Disseminated tuberculosis	5	4	1	1	......	11	1	3	3	7	6	5	7	2	......	......	2	2	6
36.	Rickets	14	5	1	1	2	23	......	......	......	......	......	......	......	1	......	......	......	......	......
37.	Syphilis	46	10	1	1	......	58	......	......	3	7	12	9	12	6	10	3	2	7	5
38.	Gonococcus infection	......	......	......	......	......	......	......	......	......	......	......	1	1	1	......	......	......	......	......
39.	Cancer of the buccal cavity	......	......	......	......	......	......	......	......	......	......	......	1	2	3	3	3	10	10	9
40.	Cancer of the stomach, liver	......	......	......	......	1	1	1	2	1	3	1	10	16	31	41	72	115	129	169
41.	Cancer of the peritoneum, intestines, rectum	......	......	......	......	......	......	......	1	......	3	......	7	9	14	6	19	31	29	28
42.	Cancer of the female genital organs	......	......	......	......	......	......	1	......	......	1	8	19	20	35	39	50	51	30	27
43.	Cancer of the breast	......	......	......	......	......	......	......	1	......	......	1	2	4	16	15	30	31	20	26
44.	Cancer of the skin	......	......	......	......	......	......	1	......	......	......	......	......	2	3	7	11	6	14	14
45.	Cancer of other organs and organs not specified	......	1	1	1	......	3	1	1	3	2	6	5	12	9	23	15	21	23	32
46.	Other tumors (tumors of the female genital organs excepted)	......	......	......	......	......	......	......	......	......	1	......	1	1	......	3	1	......	1	......
47.	Acute articular rheumatism	5	1	1	1	3	11	14	14	10	10	5	4	5	8	9	12	7	11	15
48.	Chronic rheumatism and gout	......	......	......	......	......	......	......	......	1	......	......	......	1	1	2	1	2	1	8
49.	Scurvy	1	......	......	......	......	1	......	......	......	......	......	1	......	......	......	......	......	......	......
50.	Diabetes	......	......	1	......	......	1	15	13	12	21	24	17	10	21	21	30	54	49	59
51.	Exophthalmic goitre	......	......	......	......	......	......	......	......	2	3	4	5	7	4	6	5	5	4	1
52.	Addison's disease	......	......	......	......	......	......	......	......	1	......	......	......	1	1	2	......	4	1	......
53.	Leuchaemia	......	......	......	......	......	......	3	2	1	3	4	3	2	......	5	5	5	2	1
54.	Anaemia, chlorosis	5	1	......	......	......	6	......	3	2	4	3	3	......	9	11	13	19	15	18
55.	Other general diseases	9	3	2	......	1	15	2	......	4	......	......	2	1	1	2	1	1	1	......
56.	Alcoholism (acute or chronic	......	......	......	......	......	......	......	......	......	3	6	8	14	22	18	11	9	1	6
57.	Chronic lead poisoning	......	......	......	......	......	......	......	......	......	......	2	1	1	......	......	1	1	......	......
58.	Other chronic occupation poisonings	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
59.	Other chronic poisonings	......	......	......	......	......	......	......	......	1	......	1	2	......	1	......	1	2	3	2

TABLE No. 2—Continued.

	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSES.	115	29	24	20	8	196	47	27	35	36	45	65	89	148	158	216	289	320	408
60. Encephalitis	8	1	2	.....	1	12	1	1	1	1	1	3	2	2	3	.....	4	1	3
61. Meningitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. Simple meningitis	21	10	4	3	3	41	6	3	6	3	1	2	2	3	4	3	1	.....	1
B. Cerebrospinal meningitis (undefined)	3	7	.....	.....	1	11	3	1	1	.....	2	.....	.....	.....	.....	1	1	.....	.....
C. Cerebrospinal fever	13	1	6	3	.....	23	6	4	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	1
62. Locomotor ataxia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	3	8	7	12	9	6	11
63. Other diseases of the spinal cord	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. Acute anterior poliomyelitis	12	5	5	5	1	28	7	5	3	2	.....	.....	1	.....	.....		.....	.....	1
B. Other diseases of the spinal cord	2	.....	1	2	.....	5	2	.....	3	2	4	1	7	4	3	13	17	15	29
64. Cerebral Hemorrhage, apoplexy	7	2	3	3	.....	15	8	1	4	5	10	23	35	67	87	126	187	239	294
65. Softening of the brain	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	1	3	3	5	7
66. Paralysis without specified cause	.....	.....	.....	.....	.....	.....	.....	1	2	1	1	.....	3	5	9	10	22	21	32
67. General paralysis of the insane	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1	13	15	21	20	24	20	11	10
68. Other forms of mental alienation	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	3	4	1	14	4	5	8	8	1
69. Epilepsy	7	2	.....	.....	.....	9	3	5	11	14	17	14	16	15	11	12	7	5	9
70. Convulsions (nonpuerperal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
71. Convulsions of infants	33	1	1	.....	.....	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
72. Chorea	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
73. Neuralgia and neuritis	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	1	.....	1	2	1
74. Other diseases of the nervous system	2	.....	.....	1	.....	3	3	1	1	1	1	2	1	8	8	5	8	5	5
75. Diseases of the eyes and their annexa	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
76. Diseases of the ears	7	.....	2	3	2	14	7	3	1	5	2	1	1	1	.....	1	1	2	2
III. DISEASES OF THE CIRCULATORY SYSTEM.	30	6	9	6	4	55	42	33	53	56	78	106	124	181	227	350	389	568	729
77. Pericarditis	.....	1	.....	.....	.....	1	.....	3	3	1	.....	2	3	2	2	2	4	5	4
78. Acute endocarditis	1	.....	3	.....	1	5	10	2	5	6	3	12	7	11	3	17	13	5	2
79. Organic diseases of the heart	22	4	5	5	3	39	28	26	43	47	61	78	92	143	189	280	313	464	593
80. Angina pectoris	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	5	9	12	14	14	27	31	47	55
81. Diseases of the arteries, atheroma, aneurysum, etc	1	.....	.....	1	.....	2	.....	.....	.....	.....	2	.....	4	5	15	20	19	37	62

82. Embolism and thrombosis	1	.....	.....	.....	.....	1	2	.....	.....	1	5	5	4	4	3	3	7	8	9
83. Diseases of the veins (varices, Hemorrhoids, phlebitis, etc.)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1	1	1	1	1	1
84. Diseases of the lymphatic system (lymphangitis, etc.)	5	1	1	.....	.....	7	.....	.....	1	.....	.....	.....	1	.....	.....	.....	1	1	.....
85. Hemorrhage; other diseases of the circulatory system	.....	.....	.....	.....	.....	.....	.....	2	1	1	1	.....	1	1	.....	.....	.....	.....	3
IV. DISEASES OF THE RESPIRATORY SYSTEM.	842	254	117	34	39	1,286	77	43	60	66	62	76	76	97	89	120	135	170	211
86. Diseases of the nasal fossae	3	1	.....	.....	1	5	.....	1	.....	1	.....	.....	.....	.....	.....	1	.....	2	.....
87. Diseases of the larynx	14	5	4	1	2	26	7	.....	.....	1	1	.....	.....	1	.....	2	.....	.....	.....
88. Diseases of the thyroid body	1	.....	.....	.....	.....	.....	.....	.....	2	1	2	3	3	.....	.....	.....	.....	1	.....
89. Acute bronchitis	97	22	7	3	6	135	4	3	3	1	.....	1	2	1	1	8	3	3	4
90. Chronic bronchitis	.....	2	1	.....	.....	3	.....	2	4	1	1	4	2	3	2	3	10	15	26
91. Broncho penumonia	420	132	70	16	10	648	25	13	3	10	4	13	7	8	15	14	19	28	42
92. Pneumonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. Lobar pneumonia	137	48	24	8	15	232	18	17	31	34	29	35	37	55	40	62	61	52	71
B. Pneumonia (undefined)	156	41	11	6	.....	214	17	4	10	12	20	13	18	24	24	22	30	46	48
93. Pleurisy	2	1	.....	.....	3	6	4	1	4	2	4	4	1	3	3	2	2	3	5
94. Pulmonary congestion, pulmonary apoplexy	9	1	.....	.....	.....	10	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	2	1
95. Gangrene of the lung	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	1	.....
96. Asthma	1	.....	.....	.....	2	3	1	.....	.....	.....	.....	2	3	2	4	2	7	13	7
97. Pulmonary emphysema	2	.....	.....	.....	.....	2	.....	.....	.....	.....	1	.....	.....	.....	.....	2	.....	1	3
98. Other diseases of the respiratory system (tuberculosis excepted)	.....	1	.....	.....	.....	1	1	2	3	2	.....	1	2	.....	.....	1	2	3	4
V. DISEASES OF THE DIGESTIVE SYSTEM.	1,500	442	159	45	25	2,171	77	76	62	87	79	78	84	112	124	138	168	207	187
99. Diseases of the mouth and adnexa	13	2	.....	2	.....	17	2	.....	.....	.....	.....	1	.....	.....	.....	1	.....	3	1
100. Diseases of the pharynx	6	1	1	2	1	11	6	2	1	2	1	.....	.....	1	.....	1	.....	.....	.....
101. Diseases of the esophagus	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
102. Ulcer of the stomach	1	.....	.....	.....	.....	1	.....	.....	2	5	6	7	9	8	14	7	7	14	9
103. Other diseases of the stomach (cancer excepted)	198	18	12	4	3	235	9	3	2	9	3	11	10	8	9	17	23	26	31
104. Diarrhea and enteritis (under 2 years)	1,219	406	.....	.....	.....	1,625	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
105. Diarrhea and enteritis (2 years and over)	.....	.....	134	28	12	174	19	11	2	10	7	11	6	9	19	14	25	27	38
106. Ankylostomiasis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
107. Intestinal parasites	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
108. Appendicitis and typhlitis	3	3	4	2	6	18	24	47	32	37	30	15	19	26	19	9	15	7	7

TABLE No. 2—Continued.

	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
109. Hernia, intestinal obstruction:																			
A. Hernia	4	.....	.....	.....	.....	4	1	.....	1	.....	.....	1	4	5	5	5	6	6	8
B. Intestinal obstruction	43	7	5	4	3	62	9	6	12	11	8	8	6	6	10	17	17	23	23
110. Other diseases of the intestines	2	3	1	.....	.....	6	1	1	.....	3	2	1	2	6	2	4	5	13	4
111. Acute yellow atrophy of the liver	.....	.....	.....	.....	.....	.....	1	.....	1	1	.....	1	2	.....	.....	1	.....	2	1
112. Hydatid tumor of the liver	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
113. Cirrhosis of the liver	.....	.....	.....	1	.....	1	.....	.....	3	3	8	12	10	14	23	31	34	48	39
114. Biliary calculi	1	.....	.....	.....	.....	1	.....	.....	2	.....	5	.....	4	13	13	8	14	23	3
115. Other diseases of the liver	7	1	2	1	.....	11	2	2	2	2	5	6	6	8	3	18	17	14	23
116. Diseases of the spleen	.....	.....	.....	.....	.....	.....	1	.....	.....	1	.....	.....	2	.....	.....	1	1	.....	.....
117. Simple peritonitis (nonpuerperal)	2	1	.....	.....	.....	3	1	3	1	2	3	4	3	4	3	1	1	1	.....
118. Other diseases of the digestive system (cancer and tuberculosis excepted)	.....	.....	.....	1	.....	1	.....	1	1	1	1	.....	1	3	4	3	2	.....	.....
VI. NONVENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA.	34	13	3	7	1	58	24	22	21	52	59	89	92	118	141	197	216	299	323
119. Acute nephritis	21	8	1	4	.....	34	12	10	4	10	7	13	17	18	14	16	16	13	19
120. Bright's disease	2	4	2	3	1	12	12	12	12	25	37	39	55	73	107	154	173	260	268
121. Chyluria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
122. Other diseases of the kidneys and adnexa	5	.....	.....	.....	.....	5	.....	.....	1	2	4	4	.....	5	1	6	3	3	3
123. Calculi of the urinary passages	1	.....	.....	.....	.....	1	.....	.....	.....	.....	1	2	2	1	1	.....	3	3	3
124. Diseases of the bladder	.....	1	.....	.....	.....	1	.....	.....	1	.....	.....	5	.....	3	1	5	7	5	5
125. Disease of the urethra, urinary abscess, etc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	3	3	.....	2
126. Diseases of the prostate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	4	1	1	5	5	16
127. Nonvenereal diseases of the male genital organs	5	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
128. Uterine Hemorrhage (nonpuerperal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2	.....	.....	.....	.....	.....
129. Uterine tumor (noncancerous)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	3	5	3	9	6	3	3	2
130. Other diseases of the uterus	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	4	3	3	2	1	1	.....	2	.....
131. Cysts and other tumors of the ovary	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1	3	3	2	2	3	2	5	2
132. Salpingitis and other diseases of the female genital organs	.....	.....	.....	.....	.....	.....	.....	.....	2	12	4	13	7	5	4	2	1	.....	2
133. Nonpuerperal diseases of the breast (cancer excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

VII. THE PUERPERAL STATE.	....	....	....	....	....	....	....	....	45	89	109	92	74	32	7	2	....	....	....
134. Accidents of pregnancy	....	....	....	....	....	....	....	....	1	9	7	11	8	1	2	1	....	....	....
135. Puerperal hemorrhage	....	....	....	....	....	....	....	....	1	4	6	8	8	2	3	....	....	....	....
136. Other accidents of labor	....	....	....	....	....	....	....	....	1	8	8	6	6	5	....	....	....	....	....
137. Puerperal septicemia	....	....	....	....	....	....	....	....	31	43	56	46	38	14	2	1	....	....	....
138. Puerperal albuminuria and convulsions	....	....	....	....	....	....	....	....	10	18	30	14	7	9	....	....	....	....	....
139. Puerperal phlegmasia, alba dolens, embolus, sudden death	....	....	....	....	....	....	....	....	....	2	1	3	4	1	....	....	....	....	....
140. Following childbirth (not otherwise defined)	....	....	....	....	....	....	....	....	1	5	1	4	3	....	....	....	....	....	....
141. Puerperal diseases of the breast	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.	10	1	2	....	1	14	1	1	1	2	....	2	....	3	3	5	5	6	10
142. Gangrene	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	2	4	5	6
143. Furuncle	....	....	1	....	....	1	....	1	....	1	....	....	....	2	....	....	1	1	1
144. Acute abscess	1	....	1	....	....	2	1	....	1	1	....	2	....	1	2	1	....	....	2
145. Other diseases of the skin and adnexa	9	1	....	....	....	10	....	....	....	....	....	....	....	....	1	2	....	....	1
IX. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.	6	....	1	1	....	8	6	6	3	5	3	1	2	2	4	5	6	....	1
146. Diseases of the bones (tuberculosis excepted)	6	....	1	1	....	8	5	6	3	5	3	1	2	2	4	4	5	....	....
147. Diseases of the joints (tuberculosis and rheumatism excepted)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	1
148. Amputations	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
149. Other diseases of the organs of locomotion	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
X. MALFORMATIONS.	443	11	1	3	1	459	1	2	1	....	....	....	....	....	....	....	....	....	....
150. Congenital malformations (stillbirth not included:																			
A. Hydrocephalus	34	2	1	....	1	38	....	....	1	....	....	....	....	....	....	....	....	....	....
B. Congenital malformations of the heart	279	8	....	2	....	289	1	1	....	....	....	....	....	....	....	....	....	....	....
C. Other congenital malformations	130	1	....	1	....	132	....	1	....	....	....	....	....	....	....	....	....	....	....
XI. EARLY INFANCY.	1,747	1	....	....	....	1,748	....	....	....	....	....	....	....	....	....	....	....	....	....
151. Congenital debility, icterus and sclerema:																			
A. Premature birth	1,173	1	....	....	....	1,174	....	....	....	....	....	....	....	....	....	....	....	....	....
B. Congenital debility, atrophy, marasmus, etc.	199	....	....	....	....	199	....	....	....	....	....	....	....	....	....	....	....	....	....
152. Other causes peculiar to early infancy:																			
A. Injuries at birth	195	....	....	....	....	195	....	....	....	....	....	....	....	....	....	....	....	....	....
B. Other causes peculiar to early infancy	177	....	....	....	....	177	....	....	....	....	....	....	....	....	....	....	....	....	....
153. Lack of care	3	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....

TABLE No. 2—Continued.

	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
XII. OLD AGE.																			
154. Senility																		1	10
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.	118	51	50	33	27	279	94	94	168	236	224	188	184	153	150	166	157	133	101
155. Suicide by poison								2	15	23	18	28	16	20	18	28	22	13	6
156. Suicide by asphyxia										2	2	3	3			2	4	2	
157. Suicide by hanging or strangulation								1			4	2	5	5	8	6	13	6	5
158. Suicide by drowning										1	2			2	2	3	2	3	3
159. Suicide by firearms									6	13	7	5	13	12	7	15	7	9	3
160. Suicide by cutting or piercing instruments.										1		4	1	3	4	2	4	3	2
161. Suicide by jumping from high places																			
162. Suicide by crushing									1		1	1	1	1					
163. Other suicides												1	1				1		
164. Poisoning by food	12	2	5	1		20	2	2	1	2	3	5	1	3	2	1	1		
165. Other acute poisonings	4	16	8	3		31	2		7	5	3		4		5	2	4	3	1
166. Conflagration	2	1	1	1		5	2	1		1						2		2	
167. Burns (conflagration excepted)	6	12	18	14	7	57	14	3	6	12	9	8	9	5	8	8	6	8	7
168. Absorption of deleterious gases (conflagration excepted)	44					44	1	1	3	1	3	2	2	2	3	1	1	4	3
169. Accidental drowning	3	6	3		4	16	12	25	31	29	12	9	10	10	5	7	1	3	4
170. Traumatism by firearms			1	1	1	3	4	12	13	10	5	3	2	2	1	2	1		1
171. Traumatism by cutting or piercing instruments							3	2			2	1		1	2	1		2	
172. Traumatism by fall	14	6	1	7	6	34	5	7	5	13	17	14	12	7	8	22	21	24	22
173. Traumatism in mines and quarries:																			
A. Traumatism in mines									4	7	9	6	5	2	4	2	2	2	
B. Traumatism in quarries																			
174 Traumatism by machines					1	1	2		4	11	11	6	7	3	3	1	3	3	2
175. Traumatism by other crushing:																			
A. Railroad accidents and injuries	1	1	4			6	12	12	36	51	62	40	50	25	26	33	28	9	15
B. Street car accidents and injuries		1		1		2	3	2	7	4	8	5	6	7	7	4	6	10	9

	C. Automobile accidents and injuries	......	......	......	......	2	2	10	2	3	6	1	4	4	2	4	2	2	2	2
	D. Injuries by other vehicles	1	1	2	1	......	5	6	2	5	4	6	3	5	4	5	3	4	7	4
	E. Landslide and other crushing	......	......	......	2	3	5	1	1	4	8	4	7	4	6	1	5	4	4	3
176.	Injuries by animals	......	......	2	1	1	4	7	2	2	2	1	3	2	6	3	2	3	4	......
177.	Starvation	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	......
178.	Excessive cold	......	......	......	......	......	......	......	......	......	......	......	1	......	1	2	......	1	......	......
179.	Effects of heat	2	......	......	......	......	2	......	......	......	1	......	2	2	1	3	......	......	2	3
180.	Lightning	......	......	......	......	......	......	......	......	1	4	4	2	......	......	......	......	1	2	......
181.	Electricity (lightning excepted)	......	1	1	......	......	2	1	5	2	7	9	2	......	6	3	1	......	......	......
182.	Homicide by firearms	......	......	......	......	......	......	......	1	7	12	10	13	8	10	9	6	4	1	......
183.	Homicide by cutting or piercing instruments	......	......	......	......	......	......	......	......	......	1	4	......	1	......	3	1	......	......	2
184.	Homicide by other means	3	......	......	......	1	4	......	2	3	3	2	2	4	2	1	2	1	1	3
185.	Fractures (cause not specified)	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1	1	......
186.	Other external violence	26	4	4	1	1	36	7	9	2	2	5	6	6	5	3	2	9	2	1
	XIV. ILL DEFINED DISEASES.	18	5	......	......	1	24	......	......	......	......	......	......	2	......	......	2	......	......	1
187.	Ill defined organic disease	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
188.	Sudden death	1	......	......	......	......	1	......	......	......	......	......	......	......	......	......	......	......	......	......
189.	Ill defined or nonspecified:																			
	A. Ill defined	2	4	......	......	......	6	......	......	......	......	......	......	......	......	......	1	......	......	1
	B. Not specified or unknown	15	1	......	......	1	17	......	......	......	......	......	......	2	......	......	1	......	......	......

TABLE No. 2—Continued.

Deaths from All Causes by Months, Ages, Color, Nationality and Conjugal Relation, for the Year Ending December 31, 1912. International Classification.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
I. GENERAL DISEASES.	566	449	282	109	55	8	4	9,460	355	9,076	*†682	60	3,668	4,352	1,753	45	9,818
1. Typhoid fever	11	7	3	1	......	......	......	636	16	613	37	2	329	277	44	2	652
2. Typhus fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
3. Relapsing fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
4. Malaria	8	6	4	2	2	1	......	93	5	95	3	......	43	40	15	......	98
5. Smallpox	......	......	......	......	......	......	......	12	......	11	......	1	7	4	1	......	12
6. Measles			1	......	......	......	......	73	......	73	......	......	59	11	3	......	73
7. Scarlet fever	......	......	......	......	......	......	......	111	2	113	......	......	106	5	2	......	113
8. Whooping cough	1	......	......	......	......	......	......	252	3	255	......	......	253	1	1	......	255
9. Diphtheria and croup	1	......	......	......	......	......	......	513	5	517	......	1	499	18	1	......	518
10. Influenza	34	52	58	27	22	1	......	415	5	372	46	2	105	157	157	1	420
11. Miliary fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
12. Asiatic cholera	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
13. Cholera nostras	......	......	3	1	1	......	......	15	......	13	2	......	9	1	5	......	15
14. Dysentery	27	27	35	14	10	1	......	170	2	155	17	......	16	72	84	......	172
15. Plague	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
16. Yellow fever	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
17. Leprosy	......	......	......	......	......	......	......	......	1	1	......	......	......	......	1	......	1
18. Erysipelas	9	2	2	2	2	......	......	97	......	93	*4	1	53	31	13	1	98
19. Other epidemic diseases	......	......	......	......	......	......	......	11	......	12	†1	......	12	......	......	......	12
20. Purulent infection and septicemia	2	3	1	3	2	......	......	60	......	54	6	......	21	23	16	......	60
21. Glanders	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
22. Anthrax	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
23. Rabies	......	......	......	......	......	......	......	2	......	2	......	......	1	1	......	......	2
24. Tetanus	......	......	......	1	......	......	......	24	1	24	1	......	21	3	1	......	25
25. Mycoses	......	......	......	......	......	......	......	2	......	2	......	......	1	1	......	......	2

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*†2 Chinese, 1 Mexican. *1 Chinese. †1 Mexican.

26. Pellagra								2		2				2			2
27. Beriberi																	
28. Tuberculosis of the lungs	116	72	33	14	1		3	3,149	214	3,133	*201	30	1,179	1,695	469	21	3,364
29. Acute miliary tuberculosis	1							47	8	55			33	18	4		55
30. Tuberculosis meningitis								187	12	197	2		171	24	4		199
31. Abdominal tuberculosis	14	3	2					234	14	239	8	1	117	98	29	4	248
32. Pott's disease		1						20	1	21			15	5	1		21
33. White swellings	2	1		1				20	1	21			14	5	1	1	21
34. Tuberculosis of other organs	6	2		2				79	1	76	4		34	39	7		80
35. Disseminated tuberculosis	2	3						54	6	57	2	1	32	22	4	2	60
36. Rickets		1						23	2	24	1		24		1		25
37. Syphilis	5	1	2					131	11	135	4	3	83	39	17	3	142
38. Gonococcus infection								3		3				3			3
39. Cancer of the buccal cavity	12	11	6	1	2			73		64	9		6	44	22	1	73
40. Cancer of the stomach, liver	116	88	39	15	4			839	15	716	133	5	58	524	270	2	854
41. Cancer of the peritonaeum, intestines, rectum	25	20	11	4	1	2		205	5	185	23	2	22	124	64		210
42. Cancer of the female genital organs	27	8	4	2				315	7	290	32		16	206	100		322
43. Cancer of the breast	16	12	12	1	2			185	4	170	19		24	91	73	1	189
44. Cancer of the skin	14	28	20	7	2	2		130	1	117	14		15	65	51		131
45. Cancer of other organs and organs not specified	36	26	15	4	2			238	1	210	28	1	29	144	66		239
46. Other tumors (tumors of the female genital organs excepted)	1	5	3	1				18		17	1			10	8		18
47. Acute articular rheumatism	11	19	7	2				172	2	164	10		66	77	31		174
48. Chronic rheumatism and gout	6	11	2	2			1	38	1	33	5	1	5	22	12		39
49. Scurvy								2		2			1	1			2
50. Diabetes	44	23	12	1	2			425	4	390	39		87	244	97	1	429
51. Exophthalmic goitre	1							47		46	1		11	30	6		47
52. Addison's disease	1		1					12		12			3	8	1		12
53. Leuchaemia		1						35	2	36	1		10	24	3		37
54. Anaemia, chlorosis	6	9	4	1				125	1	115	11		19	79	28		126
55. Other general diseases	2	4	2			1		39		38	1		22	10	7		39
56. Alcoholism (acute or chronic)	3	2						101	2	80	17	6	35	42	22	4	106
57. Chronic lead poisoning	1							7		6		1		6		1	7
58. Other chronic occupation poisonings																	
59. Other chronic poisonings	5	1						19		17		2	2	6	11		19

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*1 Chinese.

TABLE No. 2—Continued.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported	Total.
II. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSES.	428	440	271	145	44	14	4	3,360	65	2,993	388	44	630	1,658	1,111	26	3,425
60. Encephalitis	.....	1	1	.....	.....	.....	.....	36	1	33	4	.....	17	18	2	.....	37
61. Meningitis:																	
A. Simple meningitis	2	2	.....	1	.....	1	.....	77	5	80	2	.....	56	19	7	.....	82
B. Cerebrospinal meningitis (undefined)	.....	.....	.....	.....	.....	.....	.....	20	.....	20	.....	.....	18	2	.....	.....	20
C. Cerebrospinal fever	.....	.....	.....	.....	.....	.....	.....	36	.....	36	.....	.....	34	1	1	.....	36
62. Locomotor ataxia	1	11	1	2	.....	.....	.....	72	1	69	4	.....	5	48	20	.....	73
63. Other diseases of the spinal cord:																	
A. Acute anterior polimyelitis	.....	.....	.....	.....	.....	.....	.....	46	1	47	.....	.....	45	1	1	.....	47
B. Other diseases of the spinal cord	18	20	9	3	1	.....	.....	154	2	142	13	1	22	100	34	.....	156
64. Cerebral hemorrhage, apoplexy	308	302	199	105	32	8	1	2,021	35	1,746	289	21	197	1,074	773	12	2,056
65. Softening of the brain	9	16	5	2	2	.....	.....	54	1	55	.....	.....	3	26	26	.....	55
66. Paralysis without specified cause	54	62	38	23	8	5	.....	294	3	259	35	3	24	140	132	1	297
67. General paralysis of the insane	12	12	8	2	1	.....	2	170	3	146	18	9	20	96	52	5	173
68. Other forms of mental alienation	4	3	3	2	.....	.....	.....	60	1	50	8	3	6	38	14	3	61
69. Epilepsy	7	3	2	1	.....	.....	1	153	9	149	7	6	94	40	23	5	162
70. Convulsions (nonpuerperal)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
71. Convulsions of infants	.....	.....	.....	.....	.....	.....	.....	34	1	35	.....	.....	35	.....	.....	.....	35
72. Chorea	1	.....	1	.....	.....	.....	.....	4	.....	4	.....	.....	1	1	2	.....	4
73. Neuralgia and neuritis	6	2	1	1	.....	.....	.....	16	1	15	2	.....	3	8	6	.....	17
74. Other diseases of the nervous system	6	4	2	2	.....	.....	.....	65	1	59	6	1	17	37	12	.....	66
75. Diseases of the eyes and their adnexa	.....	.....	1	.....	.....	.....	.....	4	.....	4	.....	.....	2	1	1	.....	4
76. Diseases of the ears	.....	2	.....	1	.....	.....	.....	44	.....	44	.....	.....	31	8	5	.....	44
III. DISEASES OF THE CIRCULATORY SYSTEM.	825	852	629	289	84	17	4	5,492	198	4,854	‡1773	64	634	2,846	2,165	46	5,691
77. Pericarditis	6	5	2	1	1	.....	.....	45	2	39	6	2	11	22	13	1	47
78. Acute endocarditis	3	4	6	.....	.....	.....	.....	110	4	96	18	.....	38	58	18	.....	114
79. Organic diseases of the heart	651	646	457	196	56	14	3	4,247	171	3,786	‡1580	53	498	2,208	1,674	39	4,419
80. Angina pectoris	61	38	19	10	1	.....	.....	336	9	310	33	2	22	218	104	1	345
81. Diseases of the arteries, atheroma, aneurysm, etc	91	150	137	75	26	3	1	637	12	521	121	7	39	278	327	5	649

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‡ 1 Syrian.

82. Embolism and thrombosis	13	5	4	3				77		66	11		11	46	20		77
83. Diseases of the veins (varices, hemorrhoids, phlebitis, etc.)		2	8	2				14		12	2		2	8	4		14
84. Diseases of the lymphatic system (lymphangitis, etc.)		1						12		11	1		8	4			12
85. Hemorrhage; other diseases of the circulatory system		1	1	2				14		13	1		5	4	5		14
IV. DISEASES OF THE RESPIRATORY SYSTEM.	276	292	268	134	62	11	1	3,475	137	3,253	344	15	1,707	1,015	874	16	3,612
86. Diseases of the nasal fossae								10		10			7	2	1		10
87. Diseases of the larynx	1	1		1	1			42		40	2		34	5	3		42
88. Diseases of the thyroid body								12	1	13			5	7	1		13
89. Acute bronchitis	15	15	18	18	6	5		239	7	222	24		150	39	53	4	246
90. Chronic bronchitis	37	39	46	26	7	1		225	7	184	44	4	20	92	118	2	232
91. Broncho pneumonia	59	68	61	32	20	3		1,050	42	1,017	74	1	729	164	197	2	1,092
92. Pneumonia:																	
A. Lobar pneumonia	78	74	61	21	13			978	43	918	98	5	411	363	240	7	1,021
B. Pneumonia (undefined)	61	05	63	20	11	2	1	696	29	660	62	3	294	237	193	1	725
93. Pleurisy	5	5	2	1				56	1	51	6		20	29	8		57
94. Pulmonary congestion, pulmonary apoplexy		8	8	3	2			36		30	6		10	13	13		36
95. Gangrene of the lung		1		1	1			6		4	2			4	2		6
96. Asthma	13	12	7	8	1			80	5	65	19	1	13	43	29		85
97. Pulmonary emphysema	3			2				14		12	2		4	7	3		14
98. Other diseases of the respiratory system (tuberculosis excepted)	4	4	2	1				31	2	27	5	1	10	10	13		33
V. DISEASES OF THE DIGESTIVE SYSTEM.	215	189	141	73	30	8	1	4,211	95	4,032	§267	8	2,613	1,086	599	9	4,307
99. Diseases of the mouth and adnexa			1					25	1	26			19	6	1		26
100. Diseases of the pharynx	1	1	1	1				29		26	3		19	8	2		29
101. Diseases of the esophagus								2		2			1	1			2
102. Ulcer of the stomach	5	8	8	2				108	4	98	14		18	71	22	1	112
103. Other diseases of the stomach (cancer excepted)	34	42	38	21	11	4		533	13	494	50	2	276	146	123	1	546
104. Diarrhea and enteritis (under 2 years)								1,581	44	1,624	1		1,625				1,625
105. Diarrhea and enteritis (2 years and over)	54	62	40	22	13	3		556	10	519	45	2	256	156	153	1	566
106. Ankylostomiasis																	
107. Intestinal parasites								1		1			1				1
108. Appendicitis and typhlitis	2	3	5	1				312	4	296	20		169	119	26	2	316
109. Hernia. intestinal obstruction:																	
A. Hernia	11	10	8	4	2			80	1	57	23	1	9	45	26	1	81
B. Intestinal obstruction	13	12	13	7	1			260	3	246	§18		109	110	45		264
110. Other diseases of the intestines	6	6	1	5	1			68	1	57	12		12	35	22		69
111. Acute yellow atrophy of the liver	3		1					13	1	14			2	8	4		14

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§ 1 Greek.

TABLE No. 2—Continued.

		70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
112.	Hydatid tumor of the liver	1	.....	.....	.....	.....	.....	.....	2	.....	2	.....	.....	.....	1	1	.....	2
113.	Cirrhosis of the liver	39	26	11	5	.....	1	1	304	5	263	44	2	42	177	89	1	309
114.	Biliary calculi	23	8	5	5	.....	.....	.....	125	2	111	16	.....	10	72	45	.....	127
115.	Other diseases of the liver	20	9	9	.....	2	.....	.....	156	3	139	20	.....	24	97	37	1	159
116.	Diseases of the spleen	1	2	.....	.....	.....	.....	.....	9	.....	9	.....	.....	3	4	2	.....	9
117.	Simple peritonitis (nonpuerperal)	2	.....	.....	.....	.....	.....	.....	30	2	31	1	.....	11	20	1	.....	32
118.	Other diseases of the digestive system (cancer and tuberculosis excepted)	.....	.....	.....	.....	.....	.....	.....	17	1	17	.....	1	7	10	.....	1	18
VI.	NONVENEREAL DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA.	366	395	270	131	30	12	.....	2,810	105	2,550	342	23	373	1,526	1,003	13	2,915
119.	Acute nephritis	11	16	17	9	2	1	.....	240	19	237	22	.....	85	114	59	1	259
120.	Bright's disease	303	316	199	97	21	9	.....	2,107	77	1,895	270	19	233	1,134	807	10	2,184
121.	Chyluria	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	1	.....	.....	1
122.	Other diseases of the kidneys and adnexa	2	8	10	3	.....	1	.....	60	1	56	4	1	11	29	21	.....	61
123.	Calculi of the urinary passages	3	3	2	1	.....	.....	.....	26	.....	23	3	.....	2	16	8	.....	26
124.	Diseases of the bladder	14	15	17	5	3	1	.....	88	.....	74	13	1	3	46	38	1	88
125.	Disease of the urethra, urinary abscess, etc	.....	1	.....	.....	.....	.....	.....	9	1	9	1	.....	1	5	4	.....	10
126.	Diseases of the prostate	29	30	20	14	4	.....	.....	129	1	111	18	1	10	78	42	.....	130
127.	Nonvenereal diseases of the male genital organs	1	.....	.....	.....	.....	.....	.....	6	.....	6	.....	.....	5	1	.....	.....	6
128.	Uterine hemorrhage (nonpuerperal)	.....	.....	.....	.....	.....	.....	.....	4	.....	4	.....	.....	.....	4	.....	.....	4
129.	Uterine tumor (noncancerous)	1	2	1	2	.....	.....	.....	39	2	38	3	.....	7	27	6	1	41
130.	Other diseases of the uterus	.....	1	.....	.....	.....	.....	.....	18	1	17	2	.....	3	13	3	.....	19
131.	Cysts and other tumors of the ovary	2	3	4	.....	.....	.....	.....	33	1	30	4	.....	5	19	10	.....	34
132.	Salpingitis and other diseases of the female genital organs	.....	.....	.....	.....	.....	.....	.....	50	2	49	2	1	8	39	5	.....	52
133.	Nonpuerperal diseases of the breast (cancer excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

VII. THE PUERPERAL STATE.	......	......	......	......	......	......	......	435	15	425	25	......	21	421	8	......	450
134. Accidents of pregnancy	......	......	......	......	......	......	......	39	1	39	1	......	3	35	2	......	40
135. Puerperal hemorrhage	......	......	......	......	......	......	......	32	......	30	2	......	......	32	......	......	32
136. Other accidents of labor	......	......	......	......	......	......	......	31	3	33	1	......	......	34	......	......	34
137. Puerperal septicemia	......	......	......	......	......	......	......	221	10	212	19	......	14	211	6	......	231
138. Puerperal albuminuria and convulsions	......	......	......	......	......	......	......	87	1	87	1	......	4	84	......	......	88
139. Puerperal phlegmasia, alba dolens, embolus, sudden death	......	......	......	......	......	......	......	11	......	10	1	......	......	11	......	......	11
140. Following childbirth (not otherwise defined)	......	......	......	......	......	......	......	14	......	14	......	......	......	14	......	......	14
141. Puerperal diseases of the breast	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUE.	10	24	15	10	7	2	......	117	4	100	20	1	22	42	55	2	121
142. Gangrene	8	24	12	9	7	2	......	77	3	65	14	1	3	27	48	2	80
143. Furuncle	......	......	1	1	......	......	......	10	......	7	3	......	2	5	3	......	10
144. Acute abscess	1	......	1	......	......	......	......	14	1	13	2	......	5	7	3	......	15
145. Other diseases of the skin and adnexa	1	......	1	......	......	......	......	16	......	15	1	......	12	3	1	......	16
IX. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION.	1	3	3	......	......	......	......	58	1	59	......	......	31	19	9	......	59
146. Diseases of the bones (tuberculosis excepted)	1	3	3	......	......	......	......	54	1	55	......	......	30	17	8	......	55
147. Diseases of the joints (tuberculosis and rheumatism excepted)	......	......	......	......	......	......	......	3	......	3	......	......	......	2	1	......	3
148. Amputations	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
149. Other diseases of the organs of locomotion	......	......	......	......	......	......	......	1	......	1	......	......	1	......	......	......	1
X. MALFORMATIONS.	......	......	......	......	......	......	......	457	6	463	......	......	463	......	......	......	463
150. Congenital malformations (stillbirth not included):																	
A. Hydrocephalus	......	......	......	......	......	......	......	38	1	39	......	......	39	......	......	......	39
B. Congenital malformation of the heart	......	......	......	......	......	......	......	286	5	291	......	......	291	......	......	......	291
C. Other congenital malformations	......	......	......	......	......	......	......	133	......	133	......	......	133	......	......	......	133
XI. EARLY INFANCY.	......	......	......	......	......	......	......	1,748	41	1,748	......	......	1,748	......	......	......	1,748
151. Congenital debility, icterus and sclerema:																	
A. Premature birth	......	......	......	......	......	......	......	1,149	25	1,174	......	......	1,174	......	......	......	1,174
B. Congenital debility, atrophy, marasmus, etc	......	......	......	......	......	......	......	190	9	199	......	......	199	......	......	......	199
152. Other causes peculiar to early infancy:																	
A. Injuries at birth	......	......	......	......	......	......	......	194	1	195	......	......	195	......	......	......	195
B. Other causes peculiar to early infancy	......	......	......	......	......	......	......	171	6	177	......	......	177	......	......	......	177
153. Lack of care	......	......	......	......	......	......	......	3	......	3	......	......	3	......	......	......	3
XII. OLD AGE.	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
154. Senility	22	62	137	83	62	7	1	378	7	297	82	6	15	79	289	2	385

TABLE No. 2—Concluded.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.	92	115	116	68	11	6	11	2,668	.77	2,311	¶334	101	1,110	1,105	428	103	2,746
155. Suicide by poison	7	4	1	1				218	4	198	12	12	50	140	25	7	222
156. Suicide by asphyxia								18		16	2		4	8	4	2	18
157. Suicide by hanging or strangulation	3	3	1	1				63		49	10	4	11	39	9	4	63
158. Suicide by drowning								17	1	12	4	2	4	8	5	1	18
159. Suicide by firearms	3	1						101		90	9	2	28	58	13	2	101
160. Suicide by cutting or piercing instruments		2						26		20	3	3	6	12	7	1	26
161. Suicide by jumping from high places			1					1		1			1				1
162. Suicide by crushing							1	6		3	1	2	3	1		2	6
163. Other suicides								3		3			1	2			3
164. Poisoning by food	2	2						45	2	46	1		28	15	4		47
165. Other acute poisonings				1				68		67		1	47	18	3		68
166. Conflagration	1		1					15		15			8	4	3		15
167. Burns (conflagration excepted)	5	13	2	4				176	7	171	¶12	1	97	58	28	1	184
168. Absorption of deleterious gases (conflagration excepted)	4	2	2	1				76	4	75	1	4	52	15	9	4	80
169. Accidental drowning	2	4	1				4	178	7	159	19	7	131	35	9	10	185
170. Traumatism by firearms								57	2	55	4		43	15	1		59
171. Traumatism by cutting or piercing instruments	1	1		1				17		15	2		8	6	3		17
172. Traumatism by fall	37	63	72	54	8	6	1	445	7	386	57	9	104	148	195	5	452
173. Traumatism in mines and quarries:																	
A. Traumatism in mines								42	1	31	11	1	17	23	2	1	43
B. Traumatism in quarries																	
174. Traumatism by machines								56	1	38	18	1	26	29	2		57
175. Traumatism by other crushing:																	
A. Railroad accidents and injuries	11	3	22				4	439	6	307	104	34	157	196	48	44	445
B. Street car accidents and injuries	2	4		1				85	2	75	12		31	39	13	4	87
C. Automobile accidents and injuries			2					48		40	7	1	27	19	2		48
D. Injuries by other vehicles	3		1	1				66	2	63	4	1	30	34	4		68
E. Landslide and other crushing		1	1	1				58	2	49	9	2	26	30	3	1	60
176. Injuries by animals	4	4	1					50		46	3	1	20	27	3		50
177. Starvation					1			2			1	1		1		1	2

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178. Excessive cold	4	1	1	......	......	......	......	11	......	8	2	1	1	5	4	1	11
179. Effects of heat	......	1	1	......	......	......	......	17	1	14	3	1	8	7	3	......	18
180. Lightning	......	1	......	......	......	......	......	15	......	15	......	......	5	10	......	......	15
181. Electricity (lightning excepted)	......	......	......	......	......	......	......	38	......	30	6	2	18	14	4	2	38
182. Homicide by firearms	2	......	2	......	......	......	1	68	18	80	3	3	35	40	7	4	86
183. Homicide by cutting or piercing instruments	......	1	......	1	......	......	......	10	4	13	......	1	5	6	2	1	14
184. Homicide by other means	......	1	......	......	......	......	......	28	3	26	3	2	12	13	3	3	31
185. Fractures (cause not specified)	......	1	......	......	......	......	......	3	......	3	......	......	......	2	1	......	3
186. Other external violence	1	2	4	1	2	......	......	104	1	92	11	2	66	28	9	2	105
XIV. ILL DEFINED DISEASES.	......	......	2	......	......	......	......	30	1	30	1	......	25	5	1	......	31
187. Ill defined organic disease	......	......	1	......	......	......	......	1	......	1	......	......	......	1	......	......	1
188. Sudden death	......	......	......	......	......	......	......	1	......	1	......	......	1	......	......	......	1
189. Ill defined or non-specified:																	
A. Ill defined	......	......	1	......	......	......	......	9	......	8	1	......	7	1	1	......	9
B. Not specified or unknown	......	......	......	......	......	......	......	19	1	20	......	......	17	3	......	......	20

TABLE No. 2—Concluded.

	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
XIII. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.	92	115	116	68	11	6	11	2,668	.77	2,311	¶334	101	1,110	1,105	428	103	2,746
155. Suicide by poison	7	4	1	1				218	4	198	12	12	50	140	25	7	222
156. Suicide by asphyxia								18		16	2		4	8	4	2	18
157. Suicide by hanging or strangulation	3	3	1	1				63		49	10	4	11	39	9	4	63
158. Suicide by drowning								17	1	12	4	2	4	8	5	1	18
159. Suicide by firearms	3	1						101		90	9	2	28	58	13	2	101
160. Suicide by cutting or piercing instruments		2						26		20	3	3	6	12	7	1	26
161. Suicide by jumping from high places			1					1		1			1				1
162. Suicide by crushing							1	6		3	1	2	3	1		2	6
163. Other suicides								3		3			1	2			3
164. Poisoning by food	2	2						45	2	46	1		28	15	4		47
165. Other acute poisonings				1				68		67		1	47	18	3		68
166. Conflagration	1		1					15		15			8	4	3		15
167. Burns (conflagration excepted)	5	13	2	4				176	7	171	¶12	1	97	58	28	1	184
168. Absorption of deleterious gases (conflagration excepted).	4	2	2	1				76	4	75	1	4	52	15	9	4	80
169. Accidental drowning	2	4	1				4	178	7	159	19	7	131	35	9	10	185
170. Traumatism by firearms								57	2	55	4		43	15	1		59
171. Traumatism by cutting or piercing instruments	1	1		1				17		15	2		8	6	3		17
172. Traumatism by fall	37	63	72	54	8	6	1	445	7	386	57	9	104	148	195	5	452
173. Traumatism in mines and quarries:																	
A. Traumatism in mines								42	1	31	11	1	17	23	2	1	43
B. Traumatism in quarries																	
174. Traumatism by machines								56	1	38	18	1	26	29	2		57
175. Traumatism by other crushing:																	
A. Railroad accidents and injuries	11	3	22				4	439	6	307	104	34	157	196	48	44	445
B. Street car accidents and injuries	2	4		1				85	2	75	12		31	39	13	4	87
C. Automobile accidents and injuries			2					48		40	7	1	27	19	2		48
D. Injuries by other vehicles	3		1	1				66	2	63	4	1	30	34	4		68
E. Landslide and other crushing		1	1	1				58	2	49	9	2	26	30	3	1	60
176. Injuries by animals	4	4	1					50		46	3	1	20	27	3		50
177. Starvation					1			2			1	1		1		1	2

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178. Excessive cold	4	1	1	......	......	......	......	11	......	8	2	1	1	5	4	1	11
179. Effects of heat	......	1	1	......	......	......	......	17	1	14	3	1	8	7	3	......	18
180. Lightning	......	1	......	......	......	......	......	15	......	15	......	......	5	10	......	......	15
181. Electricity (lightning excepted)	......	......	......	......	......	......	......	38	......	30	6	2	18	14	4	2	38
182. Homicide by firearms	2	......	2	......	......	......	1	68	18	80	3	3	35	40	7	4	86
183. Homicide by cutting or piercing instruments	......	1	......	1	......	......	......	10	4	13	......	1	5	6	2	1	14
184. Homicide by other means	......	1	......	......	......	......	......	28	3	26	3	2	12	13	3	3	31
185. Fractures (cause not specified)	......	1	......	......	......	......	......	3	......	3	......	......	......	2	1	......	3
186. Other external violence	1	2	4	1	2	......	......	104	1	92	11	2	66	28	9	2	105
XIV. ILL DEFINED DISEASES.	......	......	2	......	......	......	......	30	1	30	1	......	25	5	1	......	31
187. Ill defined organic disease	......	......	1	......	......	......	......	1	......	1	......	......	......	1	......	......	1
188. Sudden death	......	......	......	......	......	......	......	1	......	1	......	......	1	......	......	......	1
189. Ill defined or non-specified:																	
A. Ill defined	......	......	1	......	......	......	......	9	......	8	1	......	7	1	1	......	9
B. Not specified or unknown	......	......	......	......	......	......	......	19	1	20	......	......	17	3	......	......	20

TABLE No. 3.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, for Year 1912.

COUNTIES.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Adams	Total	21	21	16	24	13	11	16	17	19	15	14	17
	Males	14	6	9	12	9	4	8	7	10	5	6	9
	Females	7	15	7	12	4	7	8	10	9	10	8	8
Allen	Total	122	95	121	84	100	83	73	98	72	89	87	100
	Male	68	53	59	49	54	49	44	58	49	50	51	55
	Females	54	42	62	35	46	34	29	40	23	39	36	45
Bartholomew	Total	28	24	36	30	26	22	25	27	25	28	23	35
	Males	12	16	21	12	13	8	13	11	9	10	11	16
	Females	16	8	15	18	13	14	12	16	16	18	12	19
Benton	Total	13	8	13	8	13	2	7	10	11	2	6	7
	Males	8	3	5	5	8	....	2	4	5	2	4	6
	Females	5	5	8	3	5	2	5	6	6	....	2	1
Blackford	Total	11	14	13	9	10	16	12	13	12	14	10	11
	Males	5	8	6	5	6	10	6	6	7	6	5	4
	Females	6	6	7	4	4	6	6	7	5	8	5	7
Boone	Total	43	26	17	30	24	30	23	21	25	30	34	24
	Males	21	9	9	16	12	15	12	11	12	12	8	13
	Females	22	17	8	14	12	15	11	10	13	18	26	11
Brown	Total	11	12	10	5	4	3	6	5	8	8	8	16
	Males	6	3	7	2	2	1	3	2	1	5	3	11
	Females	5	9	3	3	2	2	3	3	7	3	5	5
Carroll	Total	18	12	18	21	13	9	15	17	17	14	11	14
	Males	12	6	11	12	5	5	10	10	12	6	7	10
	Females	6	6	7	9	8	4	5	7	5	8	4	4
Cass	Total	58	50	59	68	44	52	38	42	37	41	45	61
	Males	33	33	24	43	23	28	20	21	20	21	31	39
	Females	25	17	35	25	21	24	18	21	17	20	14	22

Clark	Total	39	32	41	28	30	26	29	30	35	25	28	36
	Males	17	19	27	12	18	15	18	11	23	13	14	20
	Females	22	13	14	16	12	11	11	19	12	12	14	16
Clay	Total	46	34	42	39	29	25	31	36	33	36	34	43
	Males	24	20	21	19	13	13	20	18	17	16	15	24
	Females	22	14	21	20	16	12	11	18	16	20	19	19
Clinton	Total	21	23	27	35	25	26	21	21	25	21	28	29
	Males	12	13	16	22	10	10	10	11	19	10	18	14
	Females	9	10	11	13	15	16	11	10	6	11	10	15
Crawford	Total	12	17	15	16	14	10	8	9	9	5	11	5
	Males	5	7	7	8	6	5	2	6	6	4	6	2
	Females	7	10	8	8	8	5	6	3	3	1	5	3
Daviess	Total	35	19	35	30	24	23	22	22	39	34	17	23
	Males	14	14	20	10	12	16	12	10	27	20	6	12
	Females	21	5	15	20	12	7	10	12	12	14	11	11
Dearborn	Total	23	29	35	20	19	13	16	23	15	28	27	28
	Males	14	11	17	9	10	4	7	10	10	15	13	15
	Females	9	18	18	11	9	9	9	13	5	13	14	13
Decatur	Total	26	33	28	18	19	14	19	26	20	19	24	35
	Males	5	18	16	14	10	6	16	15	14	8	15	16
	Females	21	15	12	4	9	8	3	11	6	11	9	19
Dekalb	Total	36	28	25	26	20	33	23	32	21	22	29	20
	Males	16	14	13	12	12	18	10	17	15	9	21	11
	Females	20	14	12	14	8	15	13	15	6	13	8	9
Delaware	Total	58	51	64	62	46	48	45	51	53	49	53	53
	Males	27	30	32	33	22	27	24	28	29	23	23	30
	Females	31	21	32	29	24	21	21	23	24	26	30	23
Dubois	Total	14	22	13	17	14	10	18	19	23	16	9	22
	Males	6	12	8	9	8	4	10	12	9	8	3	7
	Females	8	10	5	8	6	6	8	7	14	8	6	15
Elkhart	Total	48	43	51	57	41	35	35	55	53	51	45	45
	Males	28	22	29	31	26	18	22	29	31	27	23	19
	Females	20	21	22	26	15	17	13	26	22	24	22	26
Fayette	Total	11	14	12	25	20	12	17	12	12	17	15	16
	Males	6	8	7	11	12	7	9	7	7	9	7	8
	Females	5	6	5	14	8	5	8	5	5	8	8	8

TABLE No. 3—Continued.

COUNTIES.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Floyd	Total	42	36	44	41	19	36	25	34	31	43	30	31
	Males	24	19	24	22	9	14	16	20	14	19	14	14
	Females	18	17	20	19	10	22	9	14	17	24	16	17
Fountain	Total	24	26	23	26	22	22	29	24	25	20	17	29
	Males	11	17	11	15	12	11	14	15	12	13	8	10
	Females	13	9	12	11	10	11	15	9	13	7	9	19
Franklin	Total	16	26	20	20	14	17	8	10	11	21	13	19
	Males	9	12	11	8	9	10	4	7	4	15	6	14
	Females	7	14	9	12	5	7	4	3	7	6	7	5
Fulton	Total	17	23	24	16	14	9	8	18	21	11	13	15
	Males	13	12	15	8	11	3	4	11	12	6	5	8
	Females	4	11	9	8	3	6	4	7	9	5	8	7
Gibson	Total	31	37	33	27	21	20	39	37	34	39	24	27
	Males	19	21	16	13	12	12	19	19	23	21	16	19
	Females	12	16	17	14	9	8	20	18	11	18	8	8
Grant	Total	79	59	93	75	58	46	56	77	62	67	72	76
	Males	50	40	60	48	38	29	30	47	32	43	14	48
	Females	29	19	33	27	20	17	26	30	30	24	28	28
Greene	Total	49	40	39	40	25	31	44	45	51	59	38	57
	Males	27	22	24	21	12	15	23	26	28	41	21	40
	Females	22	18	15	19	13	16	21	19	23	18	17	17
Hamilton	Total	27	32	36	34	31	15	29	28	23	24	20	20
	Males	10	13	22	17	17	9	18	14	14	14	14	13
	Females	17	19	14	17	14	6	11	14	9	10	6	7
Hancock	Total	29	26	21	24	20	19	14	22	17	26	17	20
	Males	15	12	13	15	10	9	7	12	13	14	8	7
	Females	14	14	8	9	10	10	7	10	4	12	9	13
Harrison	Total	15	24	25	19	12	13	20	16	18	24	13	28
	Males	10	14	15	10	8	6	7	9	12	12	6	14
	Females	5	10	10	9	4	7	13	7	6	12	7	14

Hendricks	Total	22	27	28	23	14	17	19	10	21	20	20	30
	Males	12	19	17	8	7	12	9	4	8	13	15	19
	Females	10	8	11	15	7	5	10	6	13	7	5	11
Henry	Total	37	27	39	28	23	25	33	37	31	31	22	29
	Males	25	19	20	17	10	14	16	21	15	13	10	17
	Females	12	8	19	11	13	11	17	16	16	18	12	12
Howard	Total	40	33	31	51	33	25	37	36	27	32	26	33
	Males	16	21	18	26	20	15	17	21	15	11	16	16
	Females	24	12	13	25	13	10	20	15	12	21	10	17
Huntington	Total	39	28	23	36	25	28	15	21	29	27	22	40
	Males	14	16	14	22	12	13	9	14	13	17	15	19
	Females	25	12	9	14	13	15	6	7	16	10	7	21
Jackson	Total	26	40	30	25	32	21	27	35	23	26	27	28
	Males	15	20	19	21	16	12	11	17	11	16	14	14
	Females	11	20	11	4	16	9	16	18	12	10	13	14
Jasper	Total	11	9	17	10	15	6	14	7	9	9	12	6
	Males	5	3	9	6	6	4	8	4	4	3	8	3
	Females	6	6	8	4	9	2	6	3	5	6	4	3
Jay	Total	33	23	28	32	22	20	22	21	22	24	16	26
	Males	13	15	12	18	11	10	12	15	10	10	8	18
	Females	20	8	16	14	11	10	10	6	12	14	8	8
Jefferson	Total	20	33	35	31	38	34	29	32	30	31	42	37
	Males	13	22	20	20	26	19	13	17	16	11	26	22
	Females	7	11	15	11	12	15	16	15	14	20	16	15
Jennings	Total	10	16	13	11	12	11	18	16	15	19	18	23
	Males	6	9	7	6	7	5	10	11	5	12	11	9
	Females	4	7	6	5	5	6	8	5	10	7	7	14
Johnson	Total	19	23	24	17	23	18	16	24	15	19	24	15
	Males	12	10	13	7	10	7	6	12	6	11	11	7
	Females	7	13	11	10	13	11	10	12	9	8	13	8
Knox	Total	44	42	38	39	39	35	43	46	57	58	57	50
	Males	23	20	21	24	24	21	24	26	36	40	29	27
	Females	21	22	17	15	15	14	19	20	21	18	28	23
Kosciusko	Total	35	28	28	31	20	24	26	18	21	27	21	31
	Males	12	17	15	16	15	14	16	10	10	16	12	12
	Females	23	11	13	15	5	10	10	8	11	11	9	19

TABLE No. 3—Continued.

COUNTIES.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Floyd	Total	42	36	44	41	19	36	25	34	31	43	30	31
	Males	24	19	24	22	9	14	16	20	14	19	14	14
	Females	18	17	20	19	10	22	9	14	17	24	16	17
Fountain	Total	24	26	23	26	22	22	29	24	25	20	17	29
	Males	11	17	11	15	12	11	14	15	12	13	8	10
	Females	13	9	12	11	10	11	15	9	13	7	9	19
Franklin	Total	16	26	20	20	14	17	8	10	11	21	13	19
	Males	9	12	11	8	9	10	4	7	4	15	6	14
	Females	7	14	9	12	5	7	4	3	7	6	7	5
Fulton	Total	17	23	24	16	14	9	8	18	21	11	13	15
	Males	13	12	15	8	11	3	4	11	12	6	5	8
	Females	4	11	9	8	3	6	4	7	9	5	8	7
Gibson	Total	31	37	33	27	21	20	39	37	34	39	24	27
	Males	19	21	16	13	12	12	19	19	23	21	16	19
	Females	12	16	17	14	9	8	20	18	11	18	8	8
Grant	Total	79	59	93	75	58	46	56	77	62	67	72	76
	Males	50	40	60	48	38	29	30	47	32	43	14	48
	Females	29	19	33	27	20	17	26	30	30	24	28	28
Greene	Total	49	40	39	40	25	31	44	45	51	59	38	57
	Males	27	22	24	21	12	15	23	26	28	41	21	40
	Females	22	18	15	19	13	16	21	19	23	18	17	17
Hamilton	Total	27	32	36	34	31	15	29	28	23	24	20	20
	Males	10	13	22	17	17	9	18	14	14	14	14	13
	Females	17	19	14	17	14	6	11	14	9	10	6	7
Hancock	Total	29	26	21	24	20	19	14	22	17	26	17	20
	Males	15	12	13	15	10	9	7	12	13	14	8	7
	Females	14	14	8	9	10	10	7	10	4	12	9	13
Harrison	Total	15	24	25	19	12	13	20	16	18	24	13	28
	Males	10	14	15	10	8	6	7	9	12	12	6	14
	Females	5	10	10	9	4	7	13	7	6	12	7	14

Hendricks	Total	22	27	28	23	14	17	19	10	21	20	20	30
	Males	12	19	17	8	7	12	9	4	8	13	15	19
	Females	10	8	11	15	7	5	10	6	13	7	5	11
Henry	Total	37	27	39	28	23	25	33	37	31	31	22	29
	Males	25	19	20	17	10	14	16	21	15	13	10	17
	Females	12	8	19	11	13	11	17	16	16	18	12	12
Howard	Total	40	33	31	51	33	25	37	36	27	32	26	33
	Males	16	21	18	26	20	15	17	21	15	11	16	16
	Females	24	12	13	25	13	10	20	15	12	21	10	17
Huntington	Total	39	28	23	36	25	28	15	21	29	27	22	40
	Males	14	16	14	22	12	13	9	14	13	17	15	19
	Females	25	12	9	14	13	15	6	7	16	10	7	21
Jackson	Total	26	40	30	25	32	21	27	35	23	26	27	28
	Males	15	20	19	21	16	12	11	17	11	16	14	14
	Females	11	20	11	4	16	9	16	18	12	10	13	14
Jasper	Total	11	9	17	10	15	6	14	7	9	9	12	6
	Males	5	3	9	6	6	4	8	4	4	3	8	3
	Females	6	6	8	4	9	2	6	3	5	6	4	3
Jay	Total	33	23	28	32	22	20	22	21	22	24	16	26
	Males	13	15	12	18	11	10	12	15	10	10	8	18
	Females	20	8	16	14	11	10	10	6	12	14	8	8
Jefferson	Total	20	33	35	31	38	34	29	32	30	31	42	37
	Males	13	22	20	20	26	19	13	17	16	11	26	22
	Females	7	11	15	11	12	15	16	15	14	20	16	15
Jennings	Total	10	16	13	11	12	11	18	16	15	19	18	23
	Males	6	9	7	6	7	5	10	11	5	12	11	9
	Females	4	7	6	5	5	6	8	5	10	7	7	14
Johnson	Total	19	23	24	17	23	18	16	24	15	19	24	15
	Males	12	10	13	7	10	7	6	12	6	11	11	7
	Females	7	13	11	10	13	11	10	12	9	8	13	8
Knox	Total	44	42	38	39	39	35	43	46	57	58	57	50
	Males	23	20	21	24	24	21	24	26	36	40	29	27
	Females	21	22	17	15	15	14	19	20	21	18	28	23
Kosciusko	Total	35	28	28	31	20	24	26	18	21	27	21	31
	Males	12	17	15	16	15	14	16	10	10	16	12	12
	Females	23	11	13	15	5	10	10	8	11	11	9	19

TABLE No. 3—Continued.

COUNTIES.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Lagrange	Total	21	17	22	11	6	20	16	11	8	17	17	13
	Males	13	10	13	6	2	9	8	8	4	8	7	7
	Females	8	7	9	5	4	11	8	3	4	9	10	6
Lake	Total	119	106	116	138	103	102	126	155	121	109	106	128
	Males	83	59	65	85	60	65	74	97	73	68	73	77
	Females	36	47	51	53	43	37	52	58	48	41	33	51
Laporte	Total	64	55	71	60	58	54	48	43	49	56	41	66
	Males	30	27	37	33	31	30	25	23	32	31	23	39
	Females	34	28	34	27	27	24	23	20	17	25	18	27
Lawrence	Total	40	27	37	36	14	29	26	32	38	41	39	34
	Males	15	12	19	17	7	18	12	20	20	20	22	14
	Females	25	15	18	19	7	11	14	12	18	21	17	20
Madison	Total	58	58	68	77	58	53	37	75	87	67	61	57
	Males	29	29	35	43	35	22	15	37	46	32	33	37
	Females	29	29	33	34	23	31	22	38	41	35	28	20
Marion	Total	365	355	397	338	352	268	309	323	318	341	354	339
	Males	200	194	203	169	178	137	163	173	167	168	189	173
	Females	165	161	194	169	174	131	146	150	151	173	165	166
Marshall	Total	26	27	33	23	18	12	19	18	14	23	24	16
	Males	18	10	18	11	7	7	8	14	8	16	15	9
	Females	8	17	15	12	11	5	11	4	6	7	9	7
Martin	Total	16	13	18	12	12	11	9	18	10	15	8	16
	Males	7	8	7	4	6	7	6	7	6	5	4	9
	Females	9	5	11	8	6	4	3	11	4	10	4	7
Miami	Total	26	25	32	39	32	32	32	27	32	28	28	31
	Males	12	12	13	17	23	16	20	16	17	17	18	17
	Females	14	13	19	22	9	16	12	11	15	11	10	14
Monroe	Total	25	31	41	34	27	14	26	26	22	26	23	23
	Males	10	14	31	17	15	9	15	14	11	13	12	13
	Females	15	17	10	17	12	5	11	12	11	13	11	10

Montgomery	Total	41	39	41	31	27	20	33	33	33	31	30	31
	Males	17	16	18	17	16	13	17	17	16	12	13	12
	Females	24	23	23	14	11	7	16	16	17	19	17	19
Morgan	Total	20	28	38	22	28	18	26	19	32	24	20	19
	Males	11	14	18	10	16	6	12	9	16	7	13	10
	Females	9	14	20	12	12	12	14	10	16	17	7	9
Newton	Total	14	10	7	12	5	5	7	9	13	8	5	8
	Males	5	4	5	7	4	2	5	6	4	6	3	3
	Females	9	6	2	5	1	3	2	3	9	2	2	5
Noble	Total	31	23	29	34	33	22	21	26	15	25	21	20
	Males	14	12	14	20	17	12	10	12	8	11	11	8
	Females	17	11	15	14	16	10	11	14	7	14	10	12
Ohio	Total	9	7	2	8	5	2	5	4	3	4	4	6
	Males	4	4	1	6	3	2	1	2	2		2	5
	Females	5	3	1	2	2		4	2	1	4	2	1
Orange	Total	21	21	19	10	19	11	13	21	18	17	17	27
	Males	9	12	10	4	11	6	8	11	7	9	5	12
	Females	12	9	9	6	8	5	5	10	11	8	12	15
Owen	Total	18	16	13	14	16	6	12	14	14	13	9	25
	Males	9	9	7	8	6	5	4	8	7	7	3	10
	Females	9	7	6	6	10	1	8	6	7	6	6	15
Parke	Total	25	25	50	30	19	23	17	31	29	35	21	26
	Males	12	12	27	17	10	13	11	14	19	18	7	12
	Females	13	13	23	13	9	10	6	17	10	17	14	14
Perry	Total	22	22	29	20	14	14	19	10	23	19	12	20
	Males	16	14	19	13	7	3	12	8	12	12	6	7
	Females	6	8	10	7	7	11	7	2	11	7	6	13
Pike	Total	20	21	31	26	14	17	16	22	18	27	21	17
	Males	11	16	14	10	5	9	8	12	8	13	13	9
	Females	9	5	17	16	9	8	8	10	10	14	8	8
Porter	Total	20	27	17	27	20	16	23	21	16	7	20	21
	Males	12	17	7	16	14	8	14	8	8	5	14	9
	Females	8	10	10	11	6	8	9	13	8	2	6	12
Posey	Total	24	23	18	22	16	12	13	23	20	20	24	23
	Males	15	15	10	14	12	5	7	12	12	10	15	12
	Females	9	8	8	8	4	7	6	11	8	10	9	11

TABLE No. 3—Continued.

COUNTIES.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Pulaski	Total	14	18	16	16	15	10	8	11	19	10	16	14
	Males	7	10	7	6	7	4	1	4	6	5	11	8
	Females	7	8	9	10	8	6	7	7	13	5	5	6
Putnam	Total	22	16	19	20	15	17	17	25	15	23	16	28
	Males	7	7	11	8	8	10	6	15	11	14	9	18
	Females	15	9	8	12	7	7	11	10	4	9	7	10
Randolph	Total	31	33	33	38	20	30	29	32	23	33	19	16
	Males	14	17	18	16	12	11	12	20	10	16	7	9
	Females	17	16	15	22	8	19	17	12	13	17	12	7
Ripley	Total	13	19	19	30	14	17	16	14	24	22	9	24
	Males	5	12	12	17	9	8	11	5	17	14	7	10
	Females	8	7	7	13	5	9	5	9	7	8	2	14
Rush	Total	28	34	30	28	16	15	33	15	18	13	19	26
	Males	15	22	17	17	8	7	15	7	10	5	9	15
	Females	13	12	13	11	8	8	18	8	8	8	10	11
Scott	Total	17	7	10	7	8	3	4	10	9	6	3	15
	Males	6	4	6	6	4	3	2	4	4	2	2	6
	Females	11	3	4	1	4	....	2	6	5	4	1	9
Shelby	Total	37	26	44	33	26	24	30	30	27	34	34	34
	Males	17	13	22	21	17	15	18	17	14	18	18	19
	Females	20	13	22	12	9	9	12	13	13	16	16	15
Spencer	Total	22	27	28	23	17	20	22	16	23	22	24	17
	Males	11	15	15	13	10	12	14	8	14	10	13	8
	Females	11	12	13	10	7	8	8	8	9	12	11	9
Starke	Total	14	8	19	9	4	9	9	12	11	17	7	8
	Males	7	5	10	5	1	5	4	8	9	8	4	4
	Females	7	3	9	4	3	4	5	4	2	9	3	4
Steuben	Total	18	24	18	16	23	12	17	17	18	13	17	17
	Males	5	12	8	6	8	6	7	4	8	7	8	9
	Females	13	12	10	10	15	6	10	13	10	6	9	8

St. Joseph	Total	105	103	95	111	88	82	79	87	78	86	88	82
	Males	57	51	57	57	50	44	44	48	45	49	51	48
	Females	48	52	38	54	38	38	35	39	33	37	37	34
Sullivan	Total	37	30	29	37	24	24	22	40	50	43	27	35
	Males	27	13	20	15	11	15	10	22	29	24	18	16
	Females	10	17	9	22	13	9	12	18	21	19	9	19
Switzerland	Total	8	15	15	9	7	7	10	10	13	9	11	11
	Males	6	9	8	2	3	3	4	4	9	4	5	5
	Females	2	6	7	7	4	4	6	6	4	5	6	6
Tippecanoe	Total	58	55	74	67	52	45	55	47	56	52	54	54
	Males	27	34	42	32	28	22	31	24	27	30	31	26
	Females	31	21	32	35	24	23	24	23	29	22	23	28
Tipton	Total	17	16	14	20	11	23	9	11	14	17	14	18
	Males	9	10	5	12	4	16	4	8	6	10	9	8
	Females	8	6	9	8	7	7	5	3	8	7	5	10
Union	Total	9	11	7	3	9	4	3	6	5	6	8	9
	Males	5	8	2	2	2	2	3	1	3	3	6	6
	Females	4	3	5	1	7	2	....	5	2	3	2	3
Vanderburgh	Total	107	116	108	78	88	75	116	108	104	86	105	131
	Males	63	63	58	41	50	48	61	66	50	49	55	70
	Females	44	53	50	37	38	27	55	42	54	37	50	61
Vermillion	Total	28	26	41	33	19	16	28	23	24	27	20	33
	Males	13	8	29	17	11	11	16	15	13	15	9	16
	Females	15	18	12	16	8	5	12	8	11	12	11	17
Vigo	Total	155	106	119	117	85	76	108	128	97	95	97	113
	Males	80	56	63	66	41	39	59	77	60	60	48	60
	Females	75	50	56	51	44	37	49	51	37	35	49	53
Wabash	Total	29	24	31	18	28	26	21	31	21	20	18	36
	Males	13	12	17	6	10	11	16	16	12	9	10	22
	Females	16	12	14	12	18	15	5	15	9	11	8	14
Warren	Total	15	10	15	8	6	6	12	13	7	4	8	16
	Males	13	8	8	2	4	5	5	10	2	1	3	8
	Females	2	2	7	6	2	1	7	3	5	3	5	8
Warrick	Total	24	22	30	17	14	17	20	24	27	24	20	22
	Males	16	11	15	9	7	7	9	12	8	10	11	11
	Females	8	11	15	8	7	10	11	12	19	14	9	11

TABLE No. 3—Continued.

COUNTIES.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Washington	Total	21	8	19	23	15	10	21	17	21	21	23	26
	Males	10	4	12	10	8	5	12	9	13	11	15	14
	Females	11	4	7	13	7	5	9	8	8	10	8	12
Wayne	Total	51	56	70	55	56	43	50	52	58	59	53	72
	Males	29	29	34	28	25	25	27	31	23	27	25	48
	Females	22	27	36	27	31	18	23	21	35	32	28	24
Wells	Total	13	23	21	20	21	18	16	14	19	21	18	24
	Males	3	15	11	9	13	5	7	5	9	11	10	7
	Females	10	8	10	11	8	13	9	9	10	10	8	17
White	Total	15	15	30	10	23	16	21	18	20	11	17	24
	Males	7	9	17	4	11	8	11	10	15	6	7	10
	Females	8	6	13	6	12	8	10	8	5	5	10	14
Whitley	Total	21	22	18	21	15	19	9	13	17	16	13	18
	Males	13	13	10	8	8	14	2	9	10	7	7	8
	Females	8	9	8	13	7	5	7	4	7	9	6	10
Total	Males	1,744	1,688	1,885	1,693	1,448	1,292	1,437	1,643	1,585	1,563	1,516	1,704
Total	Females	1,569	1,423	1,599	1,506	1,247	1,128	1,271	1,342	1,323	1,401	1,269	1,495
Grand Total		3,313	3,111	3,484	3,199	2,695	2,420	2,708	2,985	2,908	2,964	2,785	3,199

TABLE No. 3—Continued.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, for Year 1912.

COUNTIES.	SEX.	Under 1	1	2	3	4	Under 5	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Adams..................	Total.:.........	41	1	5	......	2	49	4	5	3	9	4	9	7	7	4	9	11	10	14
	Males...........	16	......	4	......	......	20	2	4	1	6	......	3	3	5	1	6	7	4	6
	Females........	25	1	1	......	2	29	2	1	2	3	4	6	4	2	3	3	4	6	8
Allen....................	Total...........	133	25	9	13	2	182	19	19	32	33	54	47	49	50	51	61	73	95	89
	Males...........	83	19	3	7	2	114	9	9	19	18	23	29	27	32	30	34	42	56	52
	Females........	50	6	6	6	......	68	10	10	13	15	31	18	22	18	21	27	31	39	37
Bartholomew............	Total...........	48	10	9	......	2	69	6	4	5	12	13	10	6	14	10	15	19	19	25
	Males...........	23	6	3	......	1	33	4	1	2	6	6	4	1	3	6	9	7	11	15
	Females........	25	4	6	......	1	36	2	3	3	6	7	6	5	11	4	6	12	8	10
Benton..................	Total...........	14	4	7	......	......	25	5	1	2	2	1	4	2	5	3	1	4	6	5
	Males...........	5	1	6	......	......	12	2	......	2	1	1	......	......	3	3	......	2	3	2
	Females........	9	3	1	......	......	13	3	1	......	1	......	4	2	2	......	1	2	3	3
Blackford...............	Total...........	27	4	3	3	......	37	2	1	4	6	5	2	10	3	2	10	6	7	18
	Males...........	16	3	1	2	......	22	2	......	3	1	2	1	2	2	2	6	2	3	6
	Females........	11	1	2	1	......	15	......	1	1	5	3	1	8	1	......	4	4	4	12
Boone....................	Total...........	34	9	4	5	......	52	5	4	12	13	9	8	9	10	9	19	13	18	27
	Males...........	21	6	3	2	......	32	2	2	7	3	3	2	2	1	3	9	8	11	13
	Females........	13	3	1	3	......	20	3	2	5	10	6	6	7	9	6	10	5	7	14
Brown....................	Total...........	19	2	2	......	......	23	1	3	4	6	3	2	1	3	2	3	2	5	10
	Males...........	10	2	1	......	......	13	......	1	1	1	1	......	1	1	1	1	2	3	3
	Females........	9	......	1	......	......	10	1	2	3	5	2	2	......	2	1	2	......	2	7
Carroll..................	Total...........	18	8	5	......	1	32	2	2	5	5	8	4	2	3	11	7	8	12	18
	Males...........	14	4	2	......	1	21	1	2	5	2	1	2	1	1	9	4	3	7	9
	Females........	4	4	3	......	......	11	1	......	......	3	7	2	1	2	2	3	5	5	9
Cass.....................	Total...........	72	9	5	2	......	88	8	10	15	31	23	23	24	32	33	39	32	35	43
	Males...........	45	4	3	2	......	54	2	4	7	17	11	11	12	21	17	29	19	18	25
	Females........	27	5	2	......	......	34	6	6	8	14	12	12	12	11	16	10	13	17	18

TABLE No. 3—Continued.

COUNTIES.	SEX.	Under 1	1	2	3	4	Under 5	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Clark	Total	37	15	5	2	1	60	6	7	8	14	17	13	12	16	14	21	16	27	36
	Males	19	8	2	1	1	31	2	3	3	7	12	5	6	5	10	12	11	14	23
	Females	18	7	3	1	......	29	4	4	5	7	5	8	6	11	4	9	5	13	13
Clay	Total	70	15	10	7	3	105	13	6	6	23	17	13	16	7	14	22	27	23	33
	Males	43	3	4	5	2	57	6	3	3	9	7	3	6	6	12	10	16	15	21
	Females	27	12	6	2	1	48	7	3	3	14	10	10	10	1	2	12	11	8	12
Clinton	Total	49	10	3	3	1	66	6	7	8	8	9	12	9	9	10	15	18	21	23
	Males	33	5	2	2	......	42	2	4	3	4	3	6	4	7	5	7	7	11	17
	Females	16	5	1	1	1	24	4	3	5	4	6	6	5	2	5	8	11	10	6
Crawford	Total	18	4	......	1	1	24	4	1	7	5	4	7	7	8	2	5	9	5	5
	Males	9	1	......	1	......	11	......	......	2	2	1	4	3	4	1	3	4	4	3
	Females	9	3	......	......	1	13	4	1	5	3	3	3	4	4	1	2	5	1	2
Daviess	Total	61	14	7	4	3	89	11	6	11	11	20	10	11	5	9	6	16	18	30
	Males	34	10	3	2	2	51	4	6	3	6	5	5	6	5	3	2	13	11	17
	Females	27	4	4	2	1	38	7	......	8	5	15	5	5	......	6	4	3	7	13
Dearborn	Total	30	3	4	1	1	39	4	7	8	7	12	5	14	11	10	20	14	18	24
	Males	13	2	2	......	......	17	2	3	5	4	8	3	6	6	7	12	9	8	11
	Females	17	1	2	1	1	22	2	4	3	3	4	2	8	5	3	8	5	10	13
Decatur	Total	38	7	2	2	1	50	4	5	10	10	9	12	8	10	8	11	17	13	19
	Males	21	3	1	1	1	27	3	1	4	4	4	3	4	7	7	7	6	7	12
	Females	17	4	1	1	......	23	1	4	6	6	5	9	4	3	1	4	11	6	7
Dekalb	Total	29	9	3	2	3	46	2	4	6	13	12	9	10	7	11	17	22	18	42
	Males	15	3	2	1	......	21	......	2	4	10	7	4	5	5	5	12	10	10	23
	Females	14	6	1	1	3	25	2	2	2	3	5	5	5	2	6	5	12	8	19
Delaware	Total	113	15	10	3	5	146	13	15	24	26	28	10	19	23	20	36	41	44	47
	Males	67	7	6	1	5	86	7	6	10	12	15	4	12	11	13	23	21	26	22
	Females	46	8	4	2	......	60	6	9	14	14	13	6	7	12	7	13	20	18	25
Dubois	Total	35	12	3	4	1	55	5	2	4	6	8	10	4	7	7	5	9	14	14
	Males	20	5	2	2	......	29	2	......	1	2	4	6	3	4	3	5	4	3	8
	Females	15	7	1	2	1	26	3	2	3	4	4	4	1	3	4	......	5	11	6

Elkhart	Total	70	13	6	2	5	96	11	12	10	18	12	18	19	18	33	34	26	52	48
	Males	45	7	5	2	3	62	6	7	3	13	7	9	10	10	14	18	9	30	28
	Females	25	6	1	......	2	34	5	5	7	5	5	9	9	8	19	16	17	22	20
Fayette	Total	24	2	......	1	......	27	5	1	2	6	7	3	5	9	4	10	15	20	21
	Males	11	2	......	......	......	13	5	1	1	2	5	......	2	6	2	5	9	12	10
	Females	13	......	......	1	......	14	......	......	1	4	2	3	3	3	2	5	6	8	11
Floyd	Total	45	4	6	......	2	57	6	8	9	12	20	11	15	13	22	24	20	31	41
	Males	21	2	2	......	2	27	4	3	4	8	10	7	6	7	16	11	14	14	20
	Females	24	2	4	......	......	30	2	5	5	4	10	4	9	6	6	13	6	17	21
Fountain	Total	43	7	3	4	1	58	8	6	6	10	12	12	5	8	5	8	15	16	29
	Males	22	4	......	3	1	30	5	5	4	6	8	3	1	4	5	6	7	11	16
	Females	21	3	3	1	......	28	3	1	2	4	4	9	4	4	......	2	8	5	13
Franklin	Total	15	5	3	1	2	26	4	5	4	10	6	8	3	9	5	9	9	8	11
	Males	11	2	2	......	1	16	3	3	3	5	2	3	1	7	4	6	3	4	7
	Females	4	3	1	1	1	10	1	2	1	5	4	5	2	2	1	3	6	4	4
Fulton	Total	25	4	2	1	1	33	2	3	2	5	5	3	6	5	10	14	18	13	10
	Males	15	1	2	1	1	20	1	2	2	3	......	1	4	3	5	7	12	9	4
	Females	10	3	......	......	......	13	1	1	......	2	5	2	2	2	5	7	6	4	6
Gibson	Total	72	16	5	1	1	95	11	13	11	17	7	15	14	12	13	17	20	23	26
	Males	35	8	4	1	1	49	5	6	7	9	4	6	9	11	10	14	13	12	15
	Females	37	8	1	......	......	46	6	7	4	8	3	9	5	1	3	3	7	11	11
Grant	Total	105	28	5	4	8	150	16	7	19	21	20	25	21	27	37	18	39	47	102
	Males	53	18	1	2	4	78	11	2	9	15	3	10	12	15	14	13	19	31	74
	Females	52	10	4	2	4	72	5	5	10	6	17	15	9	12	23	5	20	16	28
Greene	Total	118	37	16	8	8	187	20	8	11	22	15	16	9	21	14	20	14	26	29
	Males	78	21	11	3	5	118	10	4	6	10	6	6	3	12	11	12	9	18	17
	Females	40	16	5	5	3	69	10	4	5	12	9	10	6	9	3	8	5	8	12
Hamilton	Total	4	9	3	3	3	62	6	4	8	6	14	8	6	11	10	17	17	18	30
	Males	26	6	......	2	3	37	1	2	5	4	65	2	2	5	4	11	5	13	18
	Females	18	3	3	1	......	25	5	2	3	2	9	6	4	6	6	6	12	5	12
Hancock	Total	35	10	4	......	5	54	3	1	10	6	8	7	5	8	9	9	12	18	23
	Males	25	6	2	......	2	35	2	1	5	3	5	3	1	1	4	5	6	10	13
	Females	10	4	2	......	3	19	1	......	5	3	3	4	4	7	5	4	6	8	10
Harrison	Total	34	5	4	5	2	50	1	5	3	12	10	7	8	5	6	9	5	18	16
	Males	20	3	4	3	1	31	......	4	2	4	......	3	5	3	6	5	1	6	11
	Females	14	2	......	2	1	19	1	1	1	8	10	4	3	2	......	4	4	12	

TABLE No. 3—Continued.

COUNTIES.	SEX.	Under 1	1	2	3	4	Under 5	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Hendricks	Total	30	5	5	......	1	41	4	4	10	12	8	6	2	10	11	12	11	14	22
	Males	19	4	3	......	......	26	2	2	5	6	4	2	......	5	7	9	6	7	13
	Females	11	1	2	......	1	15	2	2	5	6	4	4	2	5	4	3	5	7	9
Henry	Total	57	11	4	2	......	74	9	7	4	8	14	10	7	11	11	10	10	29	37
	Males	32	7	4	1	......	44	6	6	3	3	6	6	5	2	5	5	5	18	21
	Females	25	4	......	1	......	30	3	1	1	5	8	4	2	9	6	5	5	11	16
Howard	Total	67	16	6	4	1	94	12	9	9	23	11	17	9	13	11	19	22	24	27
	Males	33	7	5	2	......	47	4	7	4	15	3	4	6	6	6	9	13	11	13
	Females	34	9	1	2	1	47	8	2	5	8	8	13	3	7	5	10	9	13	14
Huntington	Total	54	4	5	1	......	64	4	7	5	7	7	8	5	14	15	18	20	20	32
	Males	27	1	2	......	......	32	2	1	1	4	6	4	2	8	9	11	15	11	19
	Females	27	3	3	1	......	34	2	6	4	3	1	4	3	6	6	7	5	9	13
Jackson	Total	66	17	5	2	2	92	7	2	9	15	14	11	6	7	7	12	13	32	26
	Males	37	10	4	1	2	54	6	2	6	5	4	4	......	4	3	6	4	19	18
	Females	29	7	1	1	......	38	1	......	3	10	10	7	6	3	4	6	9	13	8
Jasper	Total	19	2	......	......	......	21	4	2	3	4	4	5	4	3	4	4	4	9	9
	Males	10	1	......	......	......	11	1	1	1	3	2	2	2	3	2	1	2	4	5
	Females	9	1	......	......	......	10	3	1	2	1	2	3	2	......	2	3	2	5	4
Jay	Total	37	7	4	4	4	56	7	3	9	7	10	10	13	5	10	15	20	19	22
	Males	25	2	1	1	3	32	2	2	3	4	3	6	6	2	5	7	12	11	12
	Females	12	5	3	3	1	24	5	1	6	3	7	4	7	3	5	8	8	8	10
Jefferson	Total	31	8	4	1	1	45	1	2	4	10	10	10	22	26	21	16	36	34	37
	Males	20	5	3	......	......	28	1	1	3	4	5	4	11	21	10	10	23	18	22
	Females	11	3	1	1	1	17	......	1	1	6	5	6	11	5	11	6	13	16	15
Jennings	Total	15	3	......	1	......	19	4	4	6	10	6	4	2	9	4	7	16	13	15
	Males	11	1	......	1	......	13	2	......	3	4	1	3	1	4	2	3	8	9	11
	Females	4	2	......	......	......	6	2	4	3	6	5	1	1	5	2	4	8	4	4
Johnson	Total	32	9	2	......	......	43	7	2	9	1	6	7	4	5	8	7	10	23	24
	Males	18	5	......	......	......	23	4	1	3	......	1	2	......	1	3	4	4	12	14
	Females	14	4	2	......	......	20	3	1	6	1	5	5	4	4	5	3	6	11	10

Knox	Total	102	26	13	6	12	159	20	14	16	21	16	30	22	19	17	16	24	30	32
	Males	61	12	9	3	7	92	13	10	10	11	8	11	10	12	9	13	13	20	16
	Females	41	14	4	3	5	67	7	4	6	10	8	19	12	7	8	3	11	10	16
Kosciusko	Total	45	3	5	1	......	54	3	1	6	6	3	6	7	12	8	16	23	25	27
	Males	24	1	2	1	......	28	3	1	5	3	3	2	6	5	5	6	10	13	18
	Females	21	2	3	......	......	26	......	......	1	3	......	4	1	7	3	10	13	12	9
Lagrange	Total	29	2	......	......	......	31	6	3	10	6	1	1	5	1	7	12	9	10	14
	Males	16	1	......	......	......	17	4	1	7	4	......	1	3	1	3	6	4	2	9
	Females	13	1	......	......	......	14	2	2	3	2	1	......	2	......	4	6	5	8	5
Lake	Total	451	85	51	15	12	614	37	16	22	78	97	67	80	53	50	56	53	42	45
	Males	262	38	22	10	4	336	23	8	15	52	71	45	55	38	35	40	41	25	24
	Females	189	47	29	5	8	278	14	8	7	26	26	22	25	15	15	16	12	17	21
Laporte	Total	126	11	6	6	5	154	18	8	20	20	36	23	24	22	29	22	36	45	36
	Males	70	5	2	4	3	84	9	5	9	14	23	11	19	13	17	14	19	25	20
	Females	56	6	4	2	2	70	9	3	11	6	13	12	5	9	12	8	17	20	16
Lawrence	Total	81	22	8	3	8	122	13	8	13	18	19	14	15	15	14	21	15	22	16
	Males	37	11	6	1	6	61	4	4	8	8	10	9	9	5	7	11	5	14	8
	Females	44	11	2	2	2	61	9	4	5	10	9	5	6	10	7	10	10	8	8
Madison	Total	115	16	16	7	3	157	26	12	16	33	26	24	28	26	24	48	46	52	71
	Males	68	8	8	2	1	87	16	4	7	13	5	9	16	11	13	21	27	29	41
	Females	47	8	8	5	2	70	10	8	9	20	21	15	12	15	11	27	19	23	30
Marion	Total	491	113	58	25	25	712	57	64	113	180	174	209	203	235	243	284	265	270	287
	Males	256	56	28	16	16	372	21	40	53	79	86	98	113	139	127	147	152	160	158
	Females	235	57	30	9	9	340	36	24	60	101	88	111	90	96	116	137	113	110	129
Marshall	Total	35	1	3	3	1	43	5	4	5	5	11	9	6	2	11	11	16	15	27
	Males	24	......	3	2	1	30	2	......	3	3	6	6	3	2	6	3	10	6	16
	Females	11	1	......	1	......	13	3	4	2	2	5	3	3	......	5	8	6	9	11
Martin	Total	22	4	1	1	3	31	3	2	8	6	8	6	5	10	3	11	7	10	7
	Males	10	1	......	1	1	13	2	2	2	3	4	3	3	4	......	6	4	6	3
	Females	12	3	1	......	2	18	1	......	6	3	4	3	2	6	3	5	3	4	4
Miami	Total	34	10	5	4	2	55	3	5	7	9	8	17	9	11	8	24	24	26	
	Males	19	5	3	4	2	33	1	4	3	4	1	10	6	5	5	13	14	16	
	Females	15	5	2	......	......	22	2	1	4	5	7	7	3	6	3	11	10	10	9
Monroe	Total	54	16	9	5	6	90	11	5	6	15	21	12	8	13	11	11	15	18	13
	Males	30	9	5	3	3	50	8	3	6	10	8	10	3	6	4	7	12	11	2
	Females	24	7	4	2	3	40	3	2	......	5	13	2	5	7	7	4	3	7	11

TABLE No. 3—Continued.

COUNTIES.	SEX.	Under 1	1	2	3	4	Under 5	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
Montgomery	Total	52	12	3	4	......	71	6	4	9	10	14	9	13	12	16	16	20	23	24
	Males	28	7	3	2	......	40	2	2	3	3	5	5	5	3	8	6	12	13	11
	Females	24	5	......	2	......	31	4	2	6	7	9	4	8	9	8	10	8	10	13
Morgan	Total	31	4	2	......	2	39	8	6	10	9	8	11	4	14	11	20	13	26	19
	Males	16	2	1	......	1	20	4	4	4	4	1	4	4	5	6	11	10	11	9
	Females	15	2	1	......	1	19	4	2	6	5	7	7	......	9	5	9	3	15	10
Newton	Total	18	......	5	1	1	25	2	......	3	4	5	2	3	3	......	4	6	7	8
	Males	11	......	2	1	......	14	2	......	2	......	3	1	2	......	......	2	2	3	4
	Females	7	......	3	......	1	11	......	......	1	4	2	1	1	3	......	2	4	4	4
Noble	Total	37	3	2	......	......	42	2	4	5	7	9	5	6	8	7	12	18	21	25
	Males	17	1	2	......	......	20	1	......	3	3	3	2	8	2	6	8	11	11	10
	Females	20	2	......	......	......	22	1	4	2	4	6	3	3	6	1	4	7	10	15
Ohio	Total	3	1	2	......	......	6	1	3	......	......	3	1	......	2	1	2	3	6	7
	Males	3	1	1	......	......	5	......	......	......	......	1	......	......	2	......	1	......	4	4
	Females	......	......	1	......	......	1	1	3	......	......	2	1	......	......	1	1	3	2	3
Orange	Total	25	13	3	3	1	45	8	3	8	15	11	6	7	4	6	11	9	6	14
	Males	11	6	1	1	1	20	6	2	4	7	6	4	4	2	2	5	3	4	6
	Females	14	7	2	2	......	25	2	1	4	8	5	2	3	2	4	6	6	2	8
Owen	Total	23	7	5	......	1	36	5	3	5	6	4	4	3	4	2	7	10	9	14
	Males	8	4	4	......	1	17	2	3	3	3	1	2	1	3	......	3	5	4	9
	Females	15	3	1	......	......	19	3	......	2	3	3	2	2	1	2	4	5	5	5
Parke	Total	49	11	11	2	1	74	9	8	7	13	12	18	10	12	8	10	17	20	25
	Males	27	5	7	1	......	40	3	7	2	4	4	8	5	8	3	5	9	13	12
	Females	22	6	4	1	1	34	6	1	5	9	8	10	5	4	5	5	8	7	13
Perry	Total	25	7	5	3	2	42	6	5	6	11	12	7	5	8	12	7	11	9	16
	Males	16	4	4	......	1	25	3	2	4	7	5	4	3	6	9	5	9	6	3
	Females	9	3	1	3	1	17	3	3	2	4	7	3	2	2	3	2	2	3	13
Pike	Total	50	20	7	2	3	82	9	7	9	6	5	7	9	5	2	13	7	14	19
	Males	29	15	2	1	2	49	5	3	4	1	3	4	5	1	1	5	5	7	9
	Females	21	5	5	1	1	33	4	4	5	5	2	3	4	4	1	8	2	7	10

Porter	Total	26	8	2	......	3	39	4	4	6	6	9	10	8	7	6	8	16	10	12
	Males	15	2	1	......	1	19	4	2	2	2	6	6	6	4	3	4	13	10	6
	Females	11	6	1	......	2	20	......	2	4	4	3	4	2	3	3	4	3	9	6
Posey	Total	36	9	4	3	......	52	8	4	11	5	16	5	8	12	6	9	18	18	18
	Males	18	5	3	......	......	26	5	4	8	3	12	1	5	5	3	6	12	13	11
	Females	18	4	1	3	......	26	3	......	3	2	4	4	3	7	3	3	6	5	7
Pulaski	Total	30	5	4	2	1	42	5	3	5	9	6	5	5	4	7	6	9	11	14
	Males	14	2	2	1	......	19	1	2	1	2	4	3	1	......	4	3	7	5	6
	Females	16	3	2	1	1	23	4	1	4	7	2	2	4	4	3	3	2	6	8
Putnam	Total	27	4	......	3	......	34	9	4	5	7	4	8	10	3	7	9	14	28	19
	Males	17	2	......	2	......	21	6	2	2	5	2	3	4	2	4	5	4	14	11
	Females	10	2	......	1	......	13	3	2	3	2	2	5	6	1	3	4	10	14	8
Randolph	Total	34	8	2	4	3	51	6	4	7	6	5	11	11	13	19	17	23	22	33
	Males	15	5	1	1	3	25	5	1	4	3	1	6	4	5	8	7	11	9	25
	Females	19	3	1	3	......	26	1	3	3	3	4	5	7	8	11	10	12	13	8
Ripley	Total	24	6	......	1	......	31	6	5	7	3	10	5	7	8	7	7	15	13	27
	Males	15	6	......	1	......	22	3	3	2	2	5	3	4	4	3	6	11	10	13
	Females	9	......	......	......	......	9	3	2	5	1	5	2	3	4	4	1	4	3	14
Rush	Total	42	7	5	2	4	60	3	4	7	11	13	6	7	7	7	10	22	19	16
	Males	22	2	4	1	3	32	1	1	3	9	3	1	4	5	3	6	13	9	12
	Females	20	5	1	1	1	28	2	3	4	2	10	5	3	2	4	4	9	10	4
Scott	Total	12	2	1	......	......	15	......	1	1	1	4	2	2	3	4	......	4	9	9
	Males	7	1	......	......	......	8	......	......	......	1	2	1	1	1	......	......	2	6	4
	Females	5	1	1	......	......	7	......	1	1	......	2	1	1	2	4	......	2	3	5
Shelby	Total	57	7	4	4	2	74	9	6	7	10	13	21	20	11	8	15	16	27	32
	Males	37	4	3	2	2	48	4	1	5	3	5	10	11	7	5	7	7	14	22
	Females	20	3	1	2	......	26	5	5	2	7	8	11	9	4	3	8	9	13	10
Spencer	Total	49	6	1	2	3	61	9	6	1	10	8	12	8	2	13	11	16	21	15
	Males	24	5	1	2	2	34	2	5	1	5	1	6	4	1	11	7	7	15	8
	Females	25	1	......	......	1	27	7	1	......	5	7	6	4	1	2	4	9	6	7
Starke	Total	24	3	1	4	1	33	4	2	3	3	3	2	3	3	7	9	10	4	5
	Males	13	2	......	3	1	19	1	2	......	2	1	2	......	2	5	4	7	3	3
	Females	11	1	1	1	......	14	3	......	3	1	2	......	3	1	2	5	3	1	2
Steuben	Total	16	2	2	1	......	21	1	2	2	10	4	9	5	6	5	15	9	17	17
	Males	10	1	1	......	......	12	......	1	1	5	1	4	2	2	3	4	6	6	7
	Females	6	1	1	1	......	9	1	1	1	5	3	5	3	4	2	11	3	11	10

TABLE No. 3—Continued.

Counties.	Sex.	Under 1	1	2	3	4	Under 5	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.
St. Joseph	Total	223	35	21	7	3	289	24	11	34	39	62	54	35	50	41	47	60	63	67
	Males	117	22	9	1	2	151	13	3	19	19	30	25	18	24	27	37	43	42	36
	Females	106	13	12	6	1	138	11	8	15	20	32	29	17	26	14	10	17	21	31
Sullivan	Total	100	28	10	6	1	145	10	11	8	12	9	14	13	9	15	16	18	18	17
	Males	65	11	7	3	......	86	4	3	6	7	4	9	8	5	8	11	13	8	9
	Females	35	17	3	3	1	59	6	8	2	5	5	5	5	4	7	5	5	10	8
Switzerland	Total	14	2	1	......	......	17	1	1	......	1	4	4	3	7	1	4	7	4	11
	Males	11	1	1	......	......	13	1	......	......	......	3	......	2	6	1	3	5	2	4
	Females	3	1	......	......	......	4	......	1	......	1	1	4	1	1	......	1	2	2	7
Tippecanoe	Total	59	9	10	5	3	86	7	12	18	20	24	17	23	24	22	30	38	37	68
	Males	34	4	4	3	3	48	2	5	6	11	13	9	9	16	10	19	21	20	45
	Females	25	5	6	2	......	38	5	7	12	9	11	8	14	8	12	11	17	17	23
Tipton	Total	25	6	2	1	1	35	4	1	1	7	9	4	5	7	7	8	14	15	16
	Males	13	3	2	1	......	19	4	......	......	4	3	3	2	6	3	2	7	9	11
	Females	12	3	......	......	1	16	......	1	1	3	6	1	3	1	4	6	7	6	5
Union	Total	5	3	2	......	......	10	......	1	5	2	1	1	4	2	2	2	4	7	5
	Males	3	2	......	......	......	5	......	1	3	1	......	1	2	......	2	2	2	4	2
	Females	2	1	2	......	......	5	......	......	2	1	1	......	2	2	......	......	2	3	3
Vanderburgh	Total	166	36	19	7	6	234	26	20	33	62	52	65	53	87	73	86	68	82	71
	Males	93	21	13	3	4	134	10	10	18	31	23	35	30	51	47	52	43	49	38
	Females	73	15	6	4	2	100	16	10	15	31	29	30	23	36	26	34	25	33	33
Vermillion	Total	87	18	8	5	3	121	13	6	5	7	13	6	11	10	4	10	19	11	18
	Males	50	11	4	4	2	71	6	4	2	4	7	......	7	6	2	5	8	7	9
	Females	37	7	4	1	1	50	7	2	3	3	6	6	4	4	2	5	11	4	9
Vigo	Total	219	48	25	12	13	317	35	21	39	58	65	53	56	70	53	69	71	67	88
	Males	116	22	11	7	8	164	19	16	23	31	31	27	30	38	26	43	45	41	53
	Females	103	26	14	5	5	153	16	5	16	27	34	26	26	32	27	26	26	26	35
Wabash	Total	39	12	2	3	......	56	7	11	2	8	10	4	3	9	10	15	21	20	28
	Males	24	8	1	2	......	35	3	4	1	3	6	2	2	5	4	6	8	13	12
	Females	15	4	1	1	......	21	4	7	1	5	4	2	1	4	6	9	13	7	16

Warren	Total	17	4	1	1	......	23	3	1	2	5	4	5	2	3	5	7	11	6	9
	Males	11	2	1	......	......	14	2	......	......	3	3	4	2	......	3	4	6	2	5
	Females	6	2	......	1	......	9	1	1	2	2	1	1	......	3	2	3	5	4	4
Warrick	Total	48	8	4	6	1	67	12	4	6	6	10	8	13	7	8	8	20	18	15
	Males	31	3	3	4	......	41	6	1	3	3	6	3	4	1	4	4	6	11	3
	Females	17	5	1	2	1	26	6	3	3	3	4	5	9	6	4	4	14	7	12
Washington	Total	23	3	4	5	1	36	3	5	6	8	6	6	5	5	6	7	12	14	16
	Males	12	2	2	3	......	19	2	4	1	2	2	2	1	3	3	5	7	5	10
	Females	11	1	2	2	1	17	1	1	5	6	4	4	4	2	3	2	5	9	6
Wayne	Total	63	9	2	4	5	83	8	9	13	20	17	28	29	25	36	31	35	50	47
	Males	34	4	2	2	2	44	3	5	6	13	9	13	17	11	20	24	16	26	22
	Females	29	5	......	2	3	39	5	4	7	7	8	15	12	14	16	7	19	24	25
Wells	Total	34	9	4	2	2	51	3	1	5	7	7	3	10	6	9	13	13	12	25
	Males	16	5	......	1	......	22	2	1	3	1	5	1	3	4	4	8	8	5	10
	Females	18	4	4	1	2	29	1	......	2	6	2	2	7	2	5	5	5	7	15
White	Total	43	4	3	1	......	51	4	3	6	9	6	5	7	5	7	8	5	12	16
	Males	19	4	1	1	......	25	2	2	4	5	5	2	1	4	2	5	4	7	10
	Females	24	......	2	......	......	26	2	1	2	4	1	3	6	1	5	3	1	5	6
Whitley	Total	24	4	2	1	......	31	4	1	3	5	5	6	6	4	4	15	11	20	22
	Males	16	1	1	......	......	18	2	......	1	1	1	2	5	1	3	7	6	12	16
	Females	8	3	1	1	......	13	2	1	2	4	4	4	1	3	1	8	5	8	6
Total	Males	3,016	570	298	153	127	4,164	382	302	450	662	655	618	660	761	772	1,003	1,117	1,295	1,503
Total	Females	2,372	520	256	127	91	3,366	376	271	439	655	729	680	594	618	617	754	858	990	1,186
Grand total		5,388	1,090	554	280	218	7,530	758	573	889	1,317	1,384	1,298	1,254	1,379	1,389	1,757	1,975	2,285	2,689

TABLE No. 3—Continued.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, for Year 1912.

COUNTIES.	SEX.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
Adams........	Total........	19	20	13	5	2	......	......	204	......	183	21	......	81	74	45	4	204
	Males........	8	13	6	3	1	......	......	99	......	86	13	......	40	36	20	3	99
	Females......	11	7	7	2	1	......	......	105	......	97	8	......	41	38	25	1	105
Allen........	Total........	76	79	69	38	6	1	1	1,113	11	902	207	15	392	477	243	12	1,124
	Males........	51	41	34	16	2	......	1	635	4	505	121	13	241	291	95	12	639
	Females......	25	38	35	22	4	1	......	478	7	397	86	2	151	186	148	......	485
Bartholomew........	Total........	35	29	23	10	4	1	......	328	1	311	17	1	111	133	83	2	329
	Males........	16	16	9	3	......	......	......	152	......	144	7	1	56	67	27	2	152
	Females......	19	13	14	7	4	1	......	176	1	167	10	......	55	66	56	......	177
Benton........	Total........	7	7	13	4	3	......	......	100	......	90	10	......	39	37	24	......	100
	Males........	3	5	9	3	1	......	......	52	......	47	5	......	20	21	11	......	52
	Females......	4	2	4	1	2	......	......	48	......	43	5	......	19	16	13	......	48
Blackford........	Total........	11	10	6	5	......	......	......	145	......	138	7	......	53	54	38	......	145
	Males........	8	8	2	2	......	......	......	74	......	67	7	......	33	24	17	......	74
	Females......	3	2	4	3	......	......	......	71	......	71	......	......	20	30	21	......	71
Boone........	Total........	35	35	31	11	4	3	......	326	1	321	3	3	93	140	94	......	327
	Males........	17	15	12	6	1	1	......	149	1	146	3	1	53	69	28	......	150
	Females......	18	20	19	5	3	2	......	177	......	175	......	2	40	71	66	......	177
Brown........	Total........	13	4	7	3	1	......	......	96	......	96	......	......	36	38	22	......	96
	Males........	7	3	3	3	1	......	......	46	......	46	......	......	17	19	10	......	46
	Females......	6	1	4	......	......	......	......	50	......	50	......	......	19	19	12	......	50
Carroll........	Total........	18	23	13	2	4	......	......	179	......	169	10	......	55	80	44	......	179
	Males........	11	15	10	......	2	......	......	106	......	99	7	......	37	49	20	......	106
	Females......	7	8	3	2	2	......	......	73	......	70	3	......	18	31	24	......	73

Cass	Total	62	44	25	19	6	1	2	587	7	526	*56	13	193	238	152	12	595
	Males	43	24	10	7	4	1	....	330	5	290	*36	10	121	141	62	12	336
	Females	19	20	15	12	2	....	2	257	2	236	20	3	72	97	90	....	259
Clark	Total	26	43	30	8	4	1	....	340	39	356	22	1	137	145	96	1	379
	Males	17	23	16	4	3	....	....	185	22	193	14	....	78	88	40	1	207
	Females	9	20	14	4	1	1	....	155	17	163	8	1	59	57	56	....	172
Clay	Total	32	34	29	4	2	1	1	422	6	390	32	6	166	166	93	3	428
	Males	14	13	15	1	1	1	1	215	5	200	16	4	95	87	35	3	220
	Females	18	21	14	3	1	....	....	207	1	190	16	2	71	79	58	....	208
Clinton	Total	29	24	15	7	5	1	....	302	....	296	5	1	105	121	74	2	302
	Males	17	12	8	3	2	1	....	165	....	163	2	....	66	64	33	2	165
	Females	12	12	7	4	3	....	....	137	....	133	3	1	39	57	41	....	137
Crawford	Total	10	11	14	2	1	....	....	131	....	129	1	1	42	64	25	....	131
	Males	6	7	8	1	....	....	....	64	....	62	1	1	17	41	6	....	64
	Females	4	4	6	1	1	....	....	67	....	67	....	....	25	23	19	....	67
Daviess	Total	22	19	14	10	4	1	....	321	2	311	12	....	139	114	70	....	323
	Males	10	12	8	3	3	....	....	172	1	168	5	....	82	63	28	....	173
	Females	12	7	6	7	1	1	....	149	1	143	7	....	57	51	42	....	150
Dearborn	Total	20	23	23	10	6	1	....	276	....	217	55	4	83	117	74	2	276
	Males	9	7	12	3	3	....	....	135	....	106	25	4	44	67	22	2	135
	Females	11	16	11	7	3	1	....	141	....	111	30	....	39	50	52	....	141
Decatur	Total	20	32	18	18	5	1	1	281	....	270	10	1	91	121	68	1	281
	Males	10	19	13	9	4	1	1	153	....	148	4	1	50	70	33	....	153
	Females	10	13	5	9	1	....	....	128	....	122	6	....	41	51	35	1	128
Dekalb	Total	28	29	22	14	2	....	1	311	4	295	19	1	84	149	79	3	315
	Males	17	16	10	6	....	....	1	164	4	156	11	1	48	86	31	3	168
	Females	11	13	12	8	2	....	....	147	....	139	8	....	36	63	48	....	147
Delaware	Total	50	40	32	11	7	1	....	612	21	610	20	3	253	248	129	3	633
	Males	23	19	9	7	2	....	....	316	12	316	10	2	146	140	39	3	328
	Females	27	21	23	4	5	1	....	296	9	294	10	1	107	108	90	....	305
Dubois	Total	7	19	12	4	5	....	....	197	....	159	38	....	83	72	42	....	197
	Males	2	12	6	....	2	....	....	96	....	75	21	....	43	38	15	....	96
	Females	5	7	6	4	3	....	....	101	....	84	17	....	40	34	27	....	101
Elkhart	Total	49	42	44	14	3	....	....	558	....	510	¶43	6	174	245	136	4	559
	Males	29	21	22	6	1	....	....	304	....	280	¶21	4	116	138	48	3	305
	Females	20	21	22	8	2	....	....	254	....	230	22	2	58	107	88	1	254

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*1 Chinese. ¶ 1 Indian.

TABLE No. 3—Continued.

COUNTIES.	SEX.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
Fayette	Total	13	18	9	5	3	......	......	179	4	172	10	1	56	74	52	1	183
	Males	6	9	5	2	3	......	......	95	3	91	6	1	27	48	22	1	98
	Females	7	9	4	3	......	......	......	84	1	81	4	......	29	26	30	......	85
Floyd	Total	33	36	29	18	6	1	......	388	24	357	52	3	122	166	123	1	412
	Males	17	18	15	5	3	......	......	197	12	180	27	2	65	104	39	1	209
	Females	16	18	14	13	3	1	......	191	12	177	25	1	57	62	84	......	203
Fountain	Total	17	30	24	16	2	......	......	287	......	277	10	......	104	106	76	1	287
	Males	4	13	10	10	1	......	......	149	......	142	7	......	61	62	25	1	149
	Females	13	17	14	6	1	......	......	138	......	135	3	......	43	44	51	......	138
Franklin	Total	19	25	18	12	4	......	......	195	......	165	29	1	65	73	56	1	195
	Males	9	18	8	5	2	......	......	109	......	91	18	......	42	42	24	1	109
	Females	10	7	10	7	2	......	......	86	......	74	11	1	23	31	32	......	86
Fulton	Total	29	12	14	4	1	......	......	189	......	181	6	2	59	90	39	1	189
	Males	17	6	10	2	......	......	......	108	......	101	5	2	36	56	15	1	108
	Females	12	6	4	2	1	......	......	81	......	80	1	......	23	34	24	......	81
Gibson	Total	17	26	19	7	4	2	......	350	19	346	22	1	161	131	76	1	369
	Males	15	12	8	2	2	1	......	200	10	197	12	1	90	91	28	1	210
	Females	2	14	11	5	2	1	......	150	9	149	10	......	71	40	48	......	159
Grant	Total	92	82	54	33	10	......	......	790	30	777	42	1	286	293	238	3	820
	Males	77	63	38	22	3	......	......	487	22	475	33	1	177	170	159	3	509
	Females	15	19	16	11	7	......	......	303	8	302	9	......	109	123	79	......	311
Greene	Total	36	30	31	4	4	1	......	518	......	495	22	1	257	161	99	1	518
	Males	25	18	12	1	2	......	......	300	......	284	15	1	162	93	44	1	300
	Females	11	12	19	3	2	1	......	218	......	211	7	......	95	68	55	......	218
Hamilton	Total	22	27	35	12	5	1	......	313	6	310	8	1	95	132	90	2	319
	Males	10	20	23	6	1	1	......	171	4	170	4	1	57	74	42	2	175
	Females	12	7	12	6	4	......	......	142	2	140	4	......	38	58	48	......	144

Hancock	Total	29	26	15	7	4	1	....	253	2	245	10	....	80	105	69	1	255
	Males	15	14	7	3	2	....	....	134	1	129	6	....	51	57	26	1	135
	Females	14	12	8	4	2	1	....	119	1	116	4	....	29	48	43	....	120
Harrison	Total	21	20	16	12	2	1	....	222	5	218	9	....	82	91	53	1	227
	Males	12	11	10	8	....	1	....	119	4	116	7	....	49	49	24	1	123
	Females	9	9	6	4	2	....	....	103	1	102	2	....	33	42	29	....	104
Hendricks	Total	26	26	21	8	3	....	....	250	1	245	5	1	84	102	65	....	251
	Males	14	16	13	4	2	....	....	142	1	140	2	1	47	65	31	....	143
	Females	12	10	8	4	1	....	....	108	....	105	3	....	37	37	34	....	108
Henry	Total	34	38	30	11	5	3	....	358	4	355	5	2	131	153	76	2	362
	Males	20	17	14	7	3	1	....	196	1	192	5	....	76	94	27	....	197
	Females	14	21	16	4	2	2	....	162	3	163	....	2	55	59	49	2	165
Howard	Total	31	35	24	9	5	....	....	399	4	389	‡14	1	150	156	97	1	404
	Males	26	23	8	4	3	....	....	208	3	204	‡7	1	85	90	36	1	212
	Females	5	12	16	5	2	....	....	191	1	185	7	....	65	66	61	....	192
Huntington	Total	30	25	25	19	8	....	....	333	....	302	30	1	108	138	85	2	333
	Males	16	14	14	7	4	....	....	178	....	157	21	....	53	92	32	1	178
	Females	14	11	11	12	4	....	....	155	....	145	9	1	55	46	53	1	155
Jackson	Total	29	28	14	8	8	....	....	335	5	321	18	1	140	129	71	....	340
	Males	16	19	8	6	2	....	....	183	3	175	10	1	84	66	36	....	186
	Females	13	9	6	2	6	....	....	152	2	146	8	....	56	63	35	....	154
Jasper	Total	8	17	10	8	1	....	1	125	....	111	12	2	37	54	32	2	125
	Males	5	7	5	4	1	....	1	63	....	54	7	2	19	32	10	2	63
	Females	3	10	5	4	....	....	....	62	....	57	5	....	18	22	22	....	62
Jay	Total	22	27	26	6	2	....	....	282	7	278	8	3	90	132	67	....	289
	Males	13	14	13	4	1	....	....	150	2	146	3	3	49	75	28	....	152
	Females	9	13	13	2	1	....	....	132	5	132	5	....	41	57	39	....	137
Jefferson	Total	28	35	37	9	6	1	2	386	6	354	27	11	113	177	100	2	392
	Males	20	16	18	6	1	1	2	221	4	202	15	8	67	117	40	1	225
	Females	8	19	19	3	5	....	....	165	2	152	12	3	46	60	60	1	167
Jennings	Total	22	17	14	7	3	....	....	180	2	170	10	2	55	79	46	2	182
	Males	17	5	8	3	1	....	....	96	2	89	7	2	35	42	19	2	98
	Females	5	12	6	4	2	....	....	84	....	81	3	....	20	37	27	....	84
Johnson	Total	20	30	18	9	4	....	....	233	4	233	2	2	81	97	59	....	237
	Males	8	10	13	6	3	....	....	111	1	110	1	1	39	51	22	....	112
	Females	12	20	5	3	1	....	....	122	3	123	1	1	42	46	37	....	125

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‡ 1 Syrian.

TABLE No. 3—Continued.

COUNTIES.	SEX.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
Knox	Total	30	35	18	20	6	3	......	539	9	490	48	10	246	178	118	6	548
	Males	16	18	14	14	2	3	......	308	7	270	36	9	153	96	60	6	315
	Females	14	17	4	6	4	......	......	231	2	220	12	1	93	82	58	......	233
Kosciusko	Total	34	38	22	12	7	......	......	309	1	298	11	1	77	155	78	......	310
	Males	16	21	12	6	2	......	......	165	......	155	9	1	46	89	30	......	165
	Females	18	17	10	6	5	......	......	144	1	143	2	......	31	66	48	......	145
Lagrange	Total	19	16	17	7	4	......	......	179	......	169	8	2	59	69	50	1	179
	Males	8	12	6	5	2	......	......	95	......	90	4	1	35	41	18	1	95
	Females	11	4	11	2	2	......	......	84	......	79	4	1	24	28	32	......	84
Lake	Total	38	35	27	9	4	1	5	1,405	24	1,041	363	25	845	423	138	23	1,429
	Males	24	20	13	6	2	1	5	866	13	591	264	24	527	260	70	22	879
	Females	14	15	14	3	2	......	......	539	11	450	99	1	318	163	68	1	550
Laporte	Total	56	51	44	18	1	1	1	660	5	497	162	6	271	246	143	5	665
	Males	28	24	21	5	......	......	1	357	4	266	89	6	165	142	49	5	361
	Females	28	27	23	13	1	1	......	303	1	231	73	......	106	104	94	......	304
Lawrence	Total	22	26	8	10	2	......	......	389	4	385	7	1	188	131	71	3	393
	Males	12	12	5	3	1	......	......	192	4	191	4	1	100	64	29	3	196
	Females	10	14	3	7	1	......	......	197	......	194	3	......	88	67	42	......	197
Madison	Total	48	48	40	24	5	2	......	750	6	722	28	6	257	334	162	3	756
	Males	27	21	29	11	5	1	......	391	2	371	16	6	141	177	73	2	393
	Females	21	27	11	13	......	1	......	359	4	351	12	......	116	157	89	1	363
Marion	Total	257	231	153	78	37	6	1	3,545	512	3,583	425	51	1,396	1,661	948	54	4,059
	Males	117	123	66	46	13	3	1	1,849	264	1,830	*245	39	800	905	368	41	2,114
	Females	140	108	87	32	24	3	......	1,696	248	1,753	†180	12	596	756	580	13	1,945
Marshall	Total	25	24	17	13	4	......	......	252	1	237	13	3	75	111	66	1	253
	Males	15	14	5	8	3	......	......	141	......	132	8	1	48	67	25	1	141
	Females	10	10	12	5	1	......	......	111	1	105	5	2	27	44	41	......	112

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*1 Chinese. †1 Mexican.

Martin	Total	10	11	14	4	2	......	......	158	......	150	6	2	65	63	30	......	158
	Males	7	4	8	2	......	......	......	76	......	73	2	1	33	28	15	......	76
	Females	3	7	6	2	2	......	......	82	......	77	4	1	32	35	15	......	82
Miami	Total	35	41	39	9	4	......	2	362	1	328	§30	6	89	166	105	4	364
	Males	16	22	14	8	2	......	2	196	1	173	§20	5	54	100	40	4	198
	Females	19	19	25	1	2	......	......	166	......	155	10	1	35	66	65	......	166
Monroe	Total	23	20	16	6	1	3	......	310	8	314	3	1	151	105	62	......	318
	Males	12	8	9	4	1	......	......	171	3	171	2	1	92	56	26	......	174
	Females	11	12	7	2	......	3	......	139	5	143	1	......	59	49	36	......	144
Montgomery	Total	43	46	35	14	5	......	......	383	7	379	10	1	121	159	110	......	390
	Males	19	22	18	6	1	......	......	181	3	180	4	......	63	87	34	......	184
	Females	24	24	17	8	4	......	......	202	4	199	6	1	58	72	76	......	206
Morgan	Total	33	24	21	13	4	1	......	293	1	281	12	1	91	133	70	......	294
	Males	12	13	11	6	3	......	......	142	......	134	8	......	48	71	23	......	142
	Females	21	11	10	7	1	1	......	151	1	147	4	1	43	62	47	......	152
Newton	Total	10	13	5	3	......	......	......	103	......	90	12	1	36	48	19	......	103
	Males	5	9	3	2	......	......	......	54	......	44	9	1	21	23	10	......	54
	Females	5	4	2	1	......	......	......	49	......	46	3	......	15	25	9	......	49
Noble	Total	40	33	27	19	9	1	......	300	......	268	31	1	75	130	95	......	300
	Males	19	19	15	10	2	1	......	149	......	131	17	1	39	80	30	......	149
	Females	21	14	12	9	7	......	......	151	......	137	14	......	36	50	65	......	151
Ohio	Total	4	6	8	5	1	......	......	59	......	55	3	1	12	32	15	......	59
	Males	3	2	6	4	......	......	......	32	......	29	2	1	7	18	7	......	32
	Females	1	4	2	1	1	......	......	27	......	26	1	......	5	14	8	......	27
Orange	Total	24	13	11	10	2	1	......	207	7	212	1	1	85	85	43	1	214
	Males	15	6	4	3	1	......	......	98	6	103	1	......	48	43	13	......	104
	Females	9	7	7	7	1	1	......	109	1	109	......	1	37	42	30	1	110
Owen	Total	14	17	19	5	3	......	......	170	......	166	4	......	62	68	40	......	170
	Males	8	8	7	3	1	......	......	83	......	81	2	......	33	37	13	......	83
	Females	6	9	12	2	2	......	......	87	......	85	2	......	29	31	27	......	87
Parke	Total	29	24	22	9	3	1	......	330	1	314	16	1	130	115	86	......	331
	Males	19	11	11	6	2	......	......	172	......	163	9	......	71	61	40	......	172
	Females	10	13	11	3	1	1	......	158	1	151	7	1	59	54	46	......	159
Perry	Total	15	23	15	8	5	1	......	216	8	180	43	1	81	87	56	......	224
	Males	8	13	10	4	2	1	......	124	5	105	23	1	51	57	21	......	129
	Females	7	10	5	4	3	......	......	92	3	75	20	......	30	30	35	......	95

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§ 1 Greek.

TABLE No. 3—Continued.

COUNTIES.	SEX.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
Pike	Total	19	17	11	8	1	......	......	247	3	241	9	......	115	88	47	......	250
	Males	11	6	6	3	......	......	......	127	1	125	3	......	65	49	14	......	128
	Females	8	11	5	5	1	......	......	120	2	116	6	......	50	39	33	......	122
Porter	Total	24	21	21	11	2	2	......	235	......	174	57	4	76	86	68	5	235
	Males	15	13	11	4	......	2	......	132	......	96	32	4	44	56	27	5	132
	Females	9	8	10	7	2	......	......	103	......	78	25	......	32	30	41	......	103
Posey	Total	13	18	13	3	......	1	......	228	10	214	19	5	94	91	52	1	238
	Males	8	9	6	1	......	1	......	132	7	126	9	4	58	61	19	1	139
	Females	5	9	7	2	......	......	......	96	3	88	10	1	36	30	33	......	99
Pulaski	Total	7	17	10	2	......	......	......	167	......	146	21	......	66	73	28	......	167
	Males	3	8	6	1	......	......	......	76	......	65	11	......	32	38	6	......	76
	Females	4	9	4	1	......	......	......	91	......	81	10	......	34	35	22	......	91
Putnam	Total	22	21	12	12	3	2	......	229	4	228	3	2	67	97	68	1	233
	Males	15	12	4	8	......	......	......	122	2	121	1	2	40	56	27	1	124
	Females	7	9	8	4	3	2	......	107	2	107	2	......	27	41	41	......	109
Randolph	Total	28	38	25	16	2	......	......	333	4	327	7	3	88	163	85	1	337
	Males	13	22	8	4	1	......	......	160	2	158	4	......	47	90	25	......	162
	Females	15	16	17	12	1	......	......	173	2	169	3	3	41	73	60	1	175
Ripley	Total	14	22	21	7	3	2	1	219	2	178	36	7	64	91	63	3	221
	Males	7	13	10	3	2	......	1	125	2	105	18	4	43	53	28	3	127
	Females	7	9	11	4	1	2	......	94	......	73	18	3	21	38	35	......	94
Rush	Total	18	29	25	9	2	......	......	270	5	267	6	2	94	117	63	1	275
	Males	10	16	14	4	1	......	......	144	3	140	5	2	52	71	23	1	147
	Females	8	13	11	5	1	......	......	126	2	127	1	......	42	46	40	......	128
Scott	Total	17	13	7	5	2	......	......	99	......	93	4	2	19	41	37	2	99
	Males	13	7	1	......	2	......	......	49	......	45	2	2	10	23	14	2	49
	Females	4	6	6	5	......	......	......	50	......	48	2	......	9	18	23	......	50

Shelby	Total	29	28	33	12	8	......	......	375	4	357	22	......	128	152	99	......	379
	Males	14	15	18	6	7	......	......	206	3	198	11	......	77	93	39	......	209
	Females	15	13	15	6	1	......	......	169	1	159	11	......	51	59	60	......	170
Spencer	Total	25	22	13	5	1	2	......	249	12	234	25	2	98	111	51	1	261
	Males	14	12	7	2	1	......	......	136	7	125	17	1	54	69	20	......	143
	Females	11	10	6	3	......	2	......	113	5	109	8	1	44	42	31	1	118
Starke	Total	7	11	11	4	3	......	......	127	......	101	26	......	49	47	31	......	127
	Males	4	6	6	2	1	......	......	70	......	56	14	......	29	27	14	......	70
	Females	3	5	5	2	2	......	......	57	......	45	12	......	20	20	17	......	57
Steuben	Total	23	28	24	10	2	......	......	210	......	200	10	......	42	101	67	......	210
	Males	9	11	11	2	1	......	......	88	......	86	2	......	24	45	19	......	88
	Females	14	17	13	8	1	......	......	122	......	114	8	......	18	56	48	......	122
St. Joseph	Total	58	71	43	19	10	5	2	1,077	7	839	235	10	483	395	197	9	1,084
	Males	32	40	25	12	3	1	1	599	2	437	155	9	263	236	93	9	601
	Females	26	31	18	7	7	4	1	478	5	402	80	1	220	159	104	......	483
Sullivan	Total	21	31	14	16	1	......	......	398	......	387	11	......	187	131	80	......	398
	Males	8	19	6	6	......	......	......	220	......	213	7	......	110	78	32	......	220
	Females	13	12	8	10	1	......	......	178	......	174	4	......	77	53	48	......	178
Switzerland	Total	16	20	10	11	3	......	......	125	......	120	5	......	28	51	46	......	125
	Males	4	9	5	3	1	......	......	62	......	60	2	......	19	30	13	......	62
	Females	12	11	5	8	2	......	......	63	......	60	3	......	9	21	33	......	63
Tippecanoe	Total	91	61	50	24	12	2	3	658	11	527	129	13	195	265	197	12	669
	Males	54	27	22	11	5	1	......	351	3	274	74	6	106	167	75	6	354
	Females	37	34	28	13	7	1	3	307	8	253	55	7	89	98	122	6	315
Tipton	Total	15	17	11	7	......	1	......	184	......	175	8	1	54	92	37	1	184
	Males	10	7	7	4	......	......	......	101	......	96	4	1	31	56	13	1	101
	Females	5	10	4	3	......	1	......	83	......	79	4	......	23	36	24	......	83
Union	Total	5	10	7	8	2	1	1	80	......	73	5	2	21	34	24	1	80
	Males	3	5	2	6	1	......	1	43	......	38	3	2	10	22	10	1	43
	Females	2	5	5	2	1	1	......	37	......	35	2	......	11	12	14	......	37
Vanderburgh	Total	67	66	45	20	9	3	......	1,082	140	1,017	185	20	464	485	252	21	1,222
	Males	30	32	26	9	4	2	......	589	85	553	106	15	276	281	102	15	674
	Females	37	34	19	11	5	1	......	493	55	464	79	5	188	204	150	6	548
Vermillion	Total	27	14	14	7	1	1	......	314	4	297	20	1	164	103	50	1	318
	Males	14	7	9	5	......	......	......	171	2	157	15	1	96	57	19	1	173
	Females	13	7	5	2	1	1	......	143	2	140	5	......	68	46	31	......	145

TABLE No. 3—Concluded.

COUNTIES.	SEX.	70 to 74.	75 to 79.	80 to 84.	85 to 89.	90 to 94.	95 and Over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed or Divorced.	Not Reported.	Total.
Vigo	Total	82	72	55	17	7	......	1	1,249	47	1,145	128	23	579	451	250	16	1,296
	Males	47	40	25	9	1	......	......	686	23	613	81	15	353	243	99	14	709
	Females	35	32	30	8	6	......	1	563	24	532	47	8	226	208	151	2	587
Wabash	Total	31	26	17	11	9	5	......	303	......	292	9	2	94	116	91	2	303
	Males	15	14	8	5	4	4	......	154	......	149	4	1	56	56	40	2	154
	Females	16	12	9	6	5	1	......	149	......	143	5	1	38	60	51	......	149
Warren	Total	6	10	10	5	2	1	......	120	......	111	8	1	40	48	31	1	120
	Males	4	4	7	4	1	1	......	69	......	64	4	1	24	31	13	1	69
	Females	2	6	3	1	1	......	......	51	......	47	4	......	16	17	18	......	51
Warrick	Total	17	21	15	4	1	1	......	253	8	246	14	1	106	92	63	......	261
	Males	5	12	9	3	1	......	......	123	3	119	7	......	65	40	21	......	126
	Females	12	9	6	1	......	1	......	130	5	127	7	1	41	52	42	......	135
Washington	Total	27	29	14	13	5	2	......	225	......	222	2	1	65	81	77	2	225
	Males	12	21	8	11	3	2	......	123	......	120	2	1	34	47	41	1	123
	Females	15	8	6	2	2	......	......	102	......	102	......	......	31	34	36	1	102
Wayne	Total	78	75	46	27	13	5	......	642	33	627	45	3	198	288	185	4	675
	Males	37	35	21	19	6	4	......	333	18	323	25	3	120	159	70	2	351
	Females	41	40	25	8	7	1	......	309	15	304	20	......	78	129	115	2	324
Wells	Total	18	18	15	11	......	1	......	228	......	221	7	......	67	108	53	......	228
	Males	10	6	7	4	......	1	......	105	......	101	4	......	30	56	19	......	105
	Females	8	12	8	7	......	......	......	123	......	120	3	......	37	52	34	......	123
White	Total	19	24	17	11	3	2	......	217	3	203	15	2	85	84	49	2	220
	Males	10	11	9	5	2	......	......	114	1	103	10	2	47	47	19	2	115
	Females	9	13	8	6	1	2	......	103	2	100	5	......	38	37	30	......	105
Whitley	Total	21	19	11	8	5	1	......	202	......	190	12	......	52	101	49	......	202
	Males	13	10	6	3	1	1	......	109	......	103	6	......	30	62	17	......	109
	Females	8	9	5	5	4	......	......	93	......	87	6	......	22	39	32	......	93
Total	Males	1,530	1,495	1,079	524	167	40	19	18,590	603	16,994	1,959	245	7,594	8,070	3,314	220	19,198
Total	Females	1,271	1,326	1,055	518	218	45	7	16,068	504	15,197	1,299	77	5,466	6,084	4,981	42	16,573
Grand totals	....	2,801	2,821	2,134	1,042	385	85	26	34,658	1,107	32,191	3,258	322	13,060	14,154	8,295	262	35,771

TABLE No. 4.

Deaths in Indiana by Counties, for the Year 1912.

STATE AND COUNTIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	IMPORTANT AGES.						DEATHS FROM IMPORTANT CAUSES.															
				Under 1 Year.	1 to 4 Inclusive.	5 to 9 Inclusive.	10 to 14 Inclusive.	15 to 19 Inclusive.	65 Years and Over.	Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
State	2,730,506	35,771	13.1	5,388	2,142	758	573	889	11,983	3,410	629	652	518	113	73	255	2,838	1,625	36	47	420	231	2,018	2,746	12
Northern Counties	939,532	11,760	12.5	1,945	659	230	164	268	4,018	908	167	222	120	41	13	87	952	569	10	19	101	74	686	984	8
Adams	21,872	204	9.3	41	8	4	5	3	73	13	8	7	3	....	....	3	9	8	....	....	4	1	10	13	....
Allen	95,267	1,124	11.8	133	49	19	19	32	359	99	18	14	10	5	1	2	98	28	1	1	11	6	95	67	....
Benton	12,688	100	7.8	14	11	5	1	2	39	5	2	1	....	1	....	2	4	3	....	1	....	....	3	8	....
Blackford	15,895	145	9.1	27	10	2	1	4	50	17	3	2	1	....	....	3	10	5	....	1	1	1	9	10	....
Carroll	17,972	179	9.9	18	14	2	2	5	78	13	3	2	....	1	....	....	15	11	....	....	1	1	16	10	....
Cass	36,652	595	16.2	72	16	8	10	15	202	53	7	18	3	4	1	2	45	18	....	1	8	4	36	45	....
Dekalb	25,129	315	12.5	29	17	2	4	6	138	32	8	4	1	....	....	3	17	7	....	....	5	2	19	24	....
Elkhart	49,487	559	11.3	70	26	11	12	10	200	45	4	7	5	....	....	2	46	19	1	2	5	1	41	40	....
Fulton	16,879	189	11.2	25	8	2	3	2	70	11	1	1	1	....	....	....	17	8	....	....	3	2	10	19	....
Grant	51,628	820	15.8	105	45	16	7	19	373	60	10	13	19	....	....	2	58	26	....	1	7	6	37	51	1
Howard	33,817	404	11.9	67	27	12	9	9	131	44	7	15	5	1	1	....	42	16	....	....	4	2	27	31	....
Huntington	29,060	333	11.4	54	10	4	7	5	139	18	3	4	2	....	....	7	26	3	....	....	5	2	22	23	....
Jasper	13,057	125	9.5	19	2	4	2	3	54	12	4	1	....	....	....	....	12	5	....	....	....	....	12	14	....
Jay	24,994	289	11.8	37	19	7	3	9	105	29	5	4	6	1	....	6	14	11	....	1	1	1	14	16	....
Kosciusko	27,980	310	11.0	45	9	3	1	6	140	11	7	1	2	1	....	3	32	6	2	....	2	2	17	19	....
Lagrange	15,148	179	11.8	29	2	6	3	10	77	12	3	1	1	....	2	2	10	5	....	1	3	1	8	13	....
Lake	87,361	1,429	16.3	451	163	37	16	22	164	89	14	37	27	7	4	13	166	213	2	2	5	4	37	226	....
Laporte	46,555	665	14.2	126	28	18	8	20	208	42	10	22	4	5	....	3	60	48	1	3	2	5	27	59	....
Marshall	24,193	253	10.4	35	8	5	4	5	110	24	5	2	....	....	....	3	11	4	1	1	8	1	19	20	....

TABLE No. 4—Continued.

STATE AND COUNTIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	IMPORTANT AGES.						DEATHS FROM IMPORTANT CAUSES.															
				Under 1 Year.	1 to 4 Inclusive.	5 to 9 Inclusive.	10 to 14 Inclusive.	15 to 19 Inclusive.	65 Years and Over.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
Miami	29,594	364	12 3	34	21	3	5	7	158	24	6	9	1	....	....	2	28	9	....	....	2	2	24	29	....
Newton	10,509	103	9.7	18	7	2	....	3	39	7	2	....	....	1	....	1	9	3	....	1	1	1	6	14	....
Noble	24,171	300	12.4	37	5	2	4	5	154	14	1	3	....	1	....	1	22	6	....	1	2	3	30	16	....
Porter	20,610	235	11.4	26	13	4	4	6	93	13	3	1	1	7	2	1	16	5	....	....	....	....	13	33	....
Pulaski	13,312	167	12.5	30	12	5	3	5	50	16	2	2	4	....	....	1	22	8	....	....	4	5	8	3	....
Starke	10,580	127	12.0	24	9	4	2	3	41	9	1	4	1	1	....	1	10	9	....	....	....	1	3	13	....
Steuben	14,320	210	14.6	16	5	1	2	2	104	16	3	4	1	....	....	....	6	1	....	....	2	1	14	14	....
St. Joseph	86,855	1,084	12.4	223	66	24	11	34	275	105	15	27	17	4	1	10	65	64	2	....	4	13	62	86	7
Wabash	26,932	303	11.2	39	17	7	11	2	127	21	3	4	4	....	1	6	24	8	....	2	6	2	18	26	....
Wells	22,468	228	10.1	34	17	3	1	5	88	26	2	5	1	....	....	6	22	3	....	....	1	....	19	10	....
White	17,608	220	12.4	43	8	4	3	6	92	14	4	3	....	1	....	1	19	5	....	....	4	3	11	15	....
Whitley	16,939	202	11.9	24	7	4	1	3	87	14	3	4	....	....	....	1	17	4	....	....	....	1	19	17	....
Central Counties	1,127,217	15,369	13.6	2,101	868	313	245	397	5,201	1,492	291	208	218	39	52	89	1,215	596	10	21	166	122	891	1,191	2
Bartholomew	24,881	329	13.2	48	21	6	4	5	127	35	5	3	4	....	....	4	29	14	....	1	7	3	25	25	2
Boone	24,773	327	13.2	34	18	5	4	12	146	35	6	2	2	....	7	....	11	9	....	....	7	5	13	18	....
Brown	7,975	96	12.0	19	4	1	3	4	38	6	2	4	1	....	5	....	8	5	....	....	1	1	7	2	....
Clay	32,712	428	13.0	70	35	13	6	6	136	40	6	1	9	....	2	8	39	27	....	1	8	8	13	34	....
Clinton	26,827	302	11 2	49	17	6	7	8	104	29	8	2	6	1	3	1	25	10	....	1	7	2	23	28	....
Decatur	18,831	281	14.9	38	12	4	5	10	114	28	1	6	5	....	1	4	17	10	....	....	4	4	16	17	....
Delaware	51,720	633	12.2	113	33	13	15	24	188	62	18	15	10	....	3	7	40	39	....	....	8	4	30	49	....
Fayette	14,507	183	12.6	24	3	5	1	2	69	16	1	....	....	1	....	....	10	4	....	....	....	1	11	9	....
Fountain	20,483	287	14.0	43	15	8	6	6	118	22	3	6	8	....	....	1	16	19	....	....	5	3	17	19	....
Franklin	15,335	195	12.7	15	11	4	5	4	99	24	8	1	2	2	2	....	17	2	....	1	3	....	11	16	....

Hamilton	27,054	319	11.7	44	18	6	4	8	132	35	6	2	1	....	1	1	13	14	....	2	7	3	21	22	....
Hancock	19,030	255	13.4	35	19	3	1	10	105	23	10	4	3	2	....	1	30	8	....	....	2	5	13	26	....
Hendricks	20,840	251	12.0	30	11	4	4	10	106	34	2	2	5	....	2	....	18	6	....	3	4	....	16	27	....
Henry	30,362	362	11.9	57	17	9	7	4	158	26	4	6	5	....	....	3	23	17	....	....	7	1	24	19	....
Johnson	20,443	237	11.5	32	11	7	2	9	105	21	7	3	1	....	2	....	21	7	....	....	4	....	7	15	....
Madison	65,454	756	11.5	115	42	26	12	16	238	69	16	14	23	1	....	1	51	24	....	2	9	6	48	47	....
Marion	270,261	4,059	15.0	491	221	57	64	113	1,050	413	87	54	39	9	17	4	352	133	4	5	23	31	236	326	....
Monroe	23,681	318	13.4	54	36	11	5	6	82	39	7	5	9	....	....	3	29	19	....	....	4	1	10	30	....
Montgomery	29,568	390	13 1	52	19	6	4	9	167	29	6	6	5	1	....	2	28	11	....	....	6	4	26	23	....
Morgan	21,254	294	13.8	31	8	8	6	10	115	25	6	8	5	....	....	....	30	9	....	....	4	1	21	18	....
Owen	14,053	170	12.1	23	13	5	3	5	72	16	....	2	5	....	....	2	22	7	....	....	2	1	8	16	....
Parke	22,214	331	14.9	49	25	9	8	7	113	53	8	2	9	2	....	5	34	17	2	....	3	2	17	27	....
Putnam	20,532	233	11.3	27	7	9	4	5	91	23	4	4	5	....	....	....	11	5	1	....	4	1	23	17	....
Randolph	29,117	337	11.5	34	17	6	4	7	142	31	9	3	4	1	1	4	18	7	1	....	4	4	23	23	....
Rush	19,387	275	14.1	42	18	3	4	7	99	28	5	2	....	2	1	5	15	9	....	....	2	2	15	13	....
Shelby	27,035	379	14.0	57	17	9	6	7	142	41	10	4	9	1	....	1	26	10	....	....	8	....	19	22	....
Tippecanoe	40,259	669	16.6	59	27	7	12	18	311	63	8	8	3	....	2	3	41	18	1	1	5	3	35	55	....
Tipton	17,490	184	10.5	25	10	4	1	1	67	19	1	3	....	1	....	1	14	6	....	....	3	2	11	15	....
Union	6,260	80	12.7	5	5	....	1	5	39	7	3	1	....	1	....	....	2	2	....	2	2	....	8	8	....
Vermillion	19,226	318	16.5	87	34	13	6	5	82	19	1	5	10	4	....	4	33	33	....	....	4	4	16	32	....
Vigo	90,519	1,296	14.3	219	98	35	21	39	322	119	22	28	27	4	2	19	122	80	1	1	6	15	63	127	....
Warren	10,899	120	11.0	17	6	3	1	2	43	15	1	....	1	....	....	3	6	3	....	....	....	1	16	8	....
Wayne	44,235	675	15.2	63	20	8	9	13	291	47	10	2	2	6	1	2	64	12	...	1	3	4	49	58	....
Southern Counties	663,757	8,642	13.0	1,342	615	215	164	224	2,764	1,019	171	222	180	33	8	79	671	460	16	7	153	35	441	571	2
Clark	30,260	379	12.5	37	23	6	7	8	148	40	12	7	5	....	....	1	21	19	....	..	5	1	20	30	....
Crawford	12,057	131	10.8	18	6	4	1	7	43	29	5	6	2	....	....	....	7	6	....	....	3	....	6	5	....
Daviess	27,747	323	11.6	61	28	11	6	11	100	44	3	9	11	3	....	3	28	12	2	...	2	....	13	20	....
Dearborn	21,472	276	12.8	30	9	4	7	8	107	28	6	6	8	....	....	1	29	6	....	....	5	1	17	20	....
Dubois	19,843	197	9.9	35	20	5	2	4	61	23	3	5	4	1	....	....	18	16	...	...	8	....	6	14	....
Floyd	30,310	412	13.5	45	12	6	8	9	164	63	7	6	2	3	....	5	23	11	2	...	14	2	18	35	....
Gibson	30,177	369	12.2	72	23	11	13	11	101	49	5	11	7	1	....	4	30	26	....	....	10	....	8	27	....
Greene	37,707	518	13.7	118	69	20	8	11	135	52	10	14	15	1	....	13	65	48	3	1	16	3	21	31	1
Harrison	20,232	227	11.2	34	16	1	5	3	88	43	6	10	4	4	....	....	12	7	....	....	5	3	14	7	....
Jackson	24,727	340	13.7	66	26	7	2	9	113	37	10	4	2	....	....	7	22	26	1	...	6	2	16	18	....
Jefferson	20,483	392	19.1	31	14	1	2	4	155	41	6	4	....	....	....	1	23	11	...	..	5	1	28	29	....
Jennings	14,212	182	12.8	15	4	4	4	6	78	19	4	7	1	5	....	1	10	6	1	....	4	1	12	11	....
Knox	39,816	548	13.7	102	57	20	14	16	144	45	7	15	30	1	3	6	55	36	....	1	5	6	20	42	....
Lawrence	31,114	393	12.6	81	41	13	8	13	84	46	10	11	5	2	....	4	26	31	....	....	5	....	26	29	....
Martin	13,027	158	12.2	22	9	3	2	8	48	28	5	5	2	1	....	....	8	4	....	....	4	....	8	3	....

TABLE No. 4—Concluded.

STATE AND COUNTIES.	Population.	Total Deaths Reported for Year 1913.	Annual Death Rate per 1,000 Population.	Important Ages.						Deaths from Important Causes.															
				Under 1 Year.	1 to 4 Inclusive.	5 to 9 Inclusive.	10 to 14 Inclusive.	15 to 19 Inclusive.	65 Years and Over.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
Ohio	4,329	59	13.6	3	3	1	3	......	31	5	....	....	1	1	....	....	5	1	....	....	1	....	4	4	....
Orange	17,225	214	12.4	25	20	8	3	8	75	30	4	8	8	1	....	....	15	14	....	....	2	....	9	14	....
Perry	18,146	224	12.3	25	17	6	5	6	83	29	1	6	4	1	....	4	22	5	3	....	6	....	9	16	....
Pike	19,684	250	12.7	50	32	9	7	9	75	28	5	5	11	1	....	5	15	15	1	....	5	1	10	15	....
Posey	21,713	238	10.9	36	16	8	4	11	66	29	4	6	5	2	....	6	14	14	....	1	3	....	21	14	....
Ripley	19,528	221	11.3	24	7	6	5	7	97	29	6	1	2	1	2	1	17	8	....	1	1	1	11	15	....
Scott	8,324	99	11.8	12	3	....	1	1	53	11	3	2	....	....	....	....	10	2	....	....	1	....	3	5	....
Spencer	20,676	261	12.6	49	12	9	6	1	83	31	6	9	8	1	....	1	23	11	2	1	5	1	14	17	....
Sullivan	33,082	398	12.0	100	45	10	11	8	100	32	7	14	13	1	....	4	29	43	1	....	3	4	21	32	....
Switzerland	9,914	125	12.6	14	3	1	1	......	71	8	4	....	....	....	....	....	10	3	....	....	3	....	10	5	....
Vanderburgh	78,502	1,222	15.5	166	68	26	20	33	281	147	22	30	17	2	....	6	103	61	....	....	14	5	68	87	1
Warrick	22,005	261	11.8	48	19	12	4	6	74	27	6	12	10	....	....	3	20	13	....	2	6	2	14	15	....
Washington	17,445	225	12.9	23	13	3	5	6	106	26	4	9	3	....	3	3	11	5	....	....	6	1	14	11	....
Urban	1,184,391	17,234	14.5	2,700	1,080	368	269	445	4,832	1,595	349	316	269	44	38	121	1,394	920	17	17	141	120	958	1,428	1
Rural	1,546,115	18,537	11.9	2,688	1,062	390	304	444	7,151	1,824	280	336	249	69	35	134	1,444	705	19	30	279	111	1,060	1,318	11

TABLE No. 5.

Death Rate by Counties, for the Year 1912.

STATE AND COUNTIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
State	2,730,506	35,771	13.1	125.2	23.0	23.8	18.9	4.1	2.6	9.3	103.9	59.5	1.3	1.7	15.3	8.4	73.6	100.6	.4
Northern Counties	939,532	11,760	12.5	96.6	17.7	23.6	12.7	4.3	1.3	9.2	101.3	60.5	1.0	2.0	10.7	7.8	73.0	104.8	.8
Adams	21,872	204	9.3	59.4	36.5	32.0	13.7	......	......	13.7	41.1	36.5	......	......	18.3	4.5	45.7	59.4	......
Allen	95,267	1,124	11.8	103.9	18.8	14.7	10.5	5.2	1.0	2.0	102.8	29.3	1.0	1.0	11.5	6.2	99.7	70.3	......
Benton	12,688	100	7.8	39.4	15.7	7.8	......	7.8	......	15.7	31.5	23.6	......	7.8	......	......	23.6	63.0	......
Blackford	15,895	145	9.1	107.0	18.8	12.5	6.2	......	......	18.8	62.9	31.4	......	6.2	6.2	6.2	56.6	62.9	......
Carroll	17,972	179	9.9	72.3	16.7	11.1	......	5.5	......	......	83.4	61.2	......	......	5.5	5.5	89.0	55.6	......
Cass	36,652	595	16.2	144.6	19.1	49.1	8.1	10.9	2.7	5.4	122.8	49.1	......	2.7	21.8	10.9	98.2	122.8	......
Dekalb	25,129	315	12.5	127.4	31.8	15.9	3.9	......	......	11.9	67.6	27.8	......	......	19.9	7.9	75.6	95.5	......
Elkhart	49,489	559	11.3	90.9	8.0	14.1	10.1	......	......	4.0	92.9	38.4	2.0	4.0	10.1	2.0	82.8	80.8	......
Fulton	16,879	189	11.2	65.1	5.9	5.9	5.9	......	......	......	100.7	47.3	......	......	17.7	11.8	59.2	112.6	......
Grant	51,628	820	15.8	116.2	19.3	25.1	36.8	......	......	3.8	112.3	50.3	......	1.9	13.5	11.6	71.6	98.7	1.9
Howard	33,817	404	11.9	130.1	20.6	44.3	14.7	2.9	2.9	......	124.2	47.2	......	......	11.8	5.9	79.8	91.6	......
Huntington	29,060	333	11.4	61.9	10.3	13.7	6.8	......	......	24.0	89.4	10.3	......	......	17.2	6.8	75.7	79.1	......
Jasper	13,057	125	9.5	91.9	30.6	7.6	......	......	......	......	91.9	38.2	......	......	......	......	91.9	107.2	......
Jay	24,994	289	11.8	116.0	20.0	16.0	24.0	4.0	......	24.0	56.0	44.0	......	4.0	4.0	4.0	56.0	64.0	......
Kosciusko	27,980	310	11.0	39.3	25.0	35.7	7.1	3.5	......	10.7	114.4	21.4	7.1	......	7.1	7.1	60.7	67.9	......
Lagrange	15,148	179	11.8	79.2	19.8	6.6	6.6	......	13.2	13.2	66.0	33.0	......	6.6	19.8	6.6	52.8	85.8	......
Lake	87,361	1,429	16.3	101.9	16.0	42.3	30.9	8.0	4.5	14.8	190.0	243.8	2.2	2.2	5.7	4.5	42.3	258.7	......
Laporte	46,555	665	14.2	90.2	21.4	47.2	8.5	10.7	......	6.4	128.9	103.2	2.1	6.4	4.2	10.7	58.0	126.8	......
Marshall	24,193	253	10.4	99.2	20.6	8.2	......	......	......	12.4	45.4	16.5	4.1	4.1	33.0	4.1	78.5	82.6	......

TABLE No. 5—Continued.

STATE AND COUNTIES.	Population.	Total Deaths Reported for Year 1912.	Ann al Death Rate per 1 000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
Miami	29,594	364	12.3	81.1	20.2	30.4	3.3	......	......	6.7	94.6	30.4	......	......	6.7	6.7	81.1	98.0	......
Newton	10,509	103	9.7	66.6	19.0	......	......	9.5	......	9.5	85.6	28.5	......	9.5	9.5	9.5	57.1	133.2	......
Noble	24,171	300	12.4	57.9	4.1	12.4	......	4.1	......	4.1	91.0	24.8	......	4.1	8.2	12.4	124.1	66.1	......
Porter	20,610	235	11.4	63.0	14.5	4.8	4.8	33.9	9.7	4.8	77.6	24.2	......	......	......	......	63.0	160.1	......
Pulaski	13,312	167	12.5	120.2	15.0	15.0	30.0	......	......	7.5	165.3	60.1	......	......	30.0	37.5	60.1	22.5	......
Starke	10,580	127	12.0	85.0	9.4	37.8	9.4	9.4	......	9.4	94.5	85.0	......	......	......	9.4	28.3	122.8	......
Steuben	14,320	210	14.6	111.7	20.9	27.9	6.9	......	......	......	41.9	6.9	......	......	13.9	6.9	97.7	97.7	......
St. Joseph	86,855	1,084	12.4	120.9	17.2	31.0	19.5	4.7	1.1	11.5	74.8	73.6	2.3	......	4.7	14.9	71.3	99.0	8.0
Wabash	26,932	303	11.2	77.9	11.1	14.8	14.8	......	3.7	22.2	89.1	29.7	......	7.4	22.2	7.4	66.8	96.5	......
Wells	22,468	228	10.1	115.7	8.9	22.2	4.4	......	......	26.7	97.9	13.3	......	......	4.4	......	84.5	44.5	......
White	17,608	220	12.4	79.4	22.7	17.0	......	5.6	......	5.6	107.9	28.3	......	......	22.7	17.0	62.4	85.1	......
Whitley	16,939	202	11.9	82.6	17.7	23.6	......	......	......	5.9	100.3	23.6	......	......	......	5.9	113.2	100.3	......
Central Counties	1,127,217	15,369	13.6	132.4	25.8	18.4	19.3	3.4	1.6	7.8	107.8	52.8	.8	1.8	14.7	10.8	79.0	105.7	.1
Bartholomew	24,881	329	13.2	140.7	20.0	12.0	16.0	......	......	16.0	116.5	56.2	......	4.0	28.1	12.0	100.5	100.5	8.0
Boone	24.773	327	13.2	141.3	24.2	8.0	8.0	......	28.2	......	44.4	36.3	......	......	28.2	20.1	52.4	72.6	......
Brown	7,975	96	12.0	75.2	25.0	50.1	12.5	......	62.7	......	100.3	62.7	......	......	12.5	12.5	87.7	25.0	......
Clay	32,712	428	13.0	122.3	18.3	3.0	27.5	......	6.1	3.0	119.2	82.5	......	3.0	3.0	3.0	39.7	103.9	......
Clinton	26,827	302	11.2	108.1	29.8	7.4	22.3	3.7	11.1	3.7	93.1	37.2	......	3.7	26.0	7.4	85.7	104.4	......
Decatur	18,831	281	14.9	148.7	......	38.1	26.5	......	5.3	21.2	90.2	53.1	......	......	21.2	21.2	84.9	90.2	......
Delaware	51,720	633	12.2	119.9	34.8	29.0	19.3	......	5.8	13.5	77.3	77.1	......	......	15.4	7.7	58.0	94.7	......
Fayette	14,507	183	12.6	110.2	6.8	......	......	6.8	......	......	68.9	27.5	......	......	......	6.8	75.8	62.0	......
Fountain	20,483	287	14.0	107.4	14.6	29.3	39.0	......	......	4.8	78.1	92.8	......	......	24.4	14.6	83.0	92.8	......
Franklin	15,335	195	12.7	156.6	52.1	6.5	13.0	13.0	13.0	......	110.9	13.0	......	6.5	19.5	......	71.7	104.4	......

Hamilton	27,054	319	11.7	129.4	22.1	7.3	3.6	......	3.6	3.6	48.0	51.7	......	7.3	25.8	11.0	77.6	81.3	......
Hancock	19,030	255	13.4	120.9	52.5	21.0	15.7	10.5	......	5.2	157.6	42.0	......	......	10.5	26.2	68.3	136.6	......
Hendricks	20,840	251	12.0	163.1	9.5	9.5	23.4	......	9.5	......	86.3	28.7	......	14.3	19.1	......	76.7	129.6	......
Henry	30,362	362	11.9	85.6	13.1	19.7	16.4	......	......	9.8	75.7	55.9	......	......	23.0	3.2	79.0	62.5	......
Johnson	20,443	237	11.5	102.7	34.2	14.6	4.8	......	9.7	......	102.7	34.2	......	......	19.5	......	34.2	73.3	......
Madison	65,454	756	11.5	105.4	24.4	21.3	35.1	1.5	......	1.5	77.9	36.6	......	3.0	13.7	14.5	73.3	71.8	......
Marion	270,261	4,059	15.0	152.8	32.1	19.9	14.4	3.3	6.2	1.4	130.2	49.2	1.4	1.8	8.3	11.4	87.3	33.6	......
Monroe	23,681	318	13.4	164.7	29.5	21.1	38.0	......	......	......	122.5	80.2	......	......	16.8	4.2	42.2	126.7	......
Montgomery	29,568	390	13.1	98.0	20.2	20.2	16.9	3.3	......	6.7	94.7	37.2	......	......	20.2	13.5	87.9	77.7	......
Morgan	21,254	294	13.8	117.6	28.2	37.6	23.5	......	......	......	141.2	42.3	......	......	18.8	4.7	98.8	85.0	......
Owen	14,053	170	12.1	113.9	......	14.2	35.5	......	......	14.2	156.6	49.8	......	......	14.2	7.1	56.9	113.9	......
Parke	22,214	331	14.9	238.6	36.0	9.0	40.5	9.0	......	22.5	153.1	76.5	9.0	......	13.5	9.0	76.5	121.6	......
Putnam	20,532	233	11.3	112.0	19.4	19.4	23.8	......	......	......	53.5	23.8	4.8	......	19.4	4.8	112.0	82.8	......
Randolph	29,117	337	11.5	106.5	30.9	10.3	13.7	3.4	3.4	13.7	61.8	24.0	3.4	......	13.7	13.7	78.9	78.9	......
Rush	19,387	275	14.1	144.4	25.7	10.3	......	10.3	5.1	25.7	77.3	58.4	......	......	10.3	10.3	77.3	75.2	......
Shelby	27,035	379	14.0	151.7	37.0	14.8	33.3	3.7	......	3.7	96.2	37.0	......	......	29.6	......	70.3	81.4	......
Tippecanoe	40,259	669	16.6	156.5	19.8	19.8	7.4	......	4.9	7.4	101.9	44.7	2.4	2.4	12.4	7.4	86.9	136.1	......
Tipton	17,490	184	10.5	108.7	5.7	17.1	......	5.7	......	5.7	80.0	34.3	......	......	17.1	11.4	62.8	85.7	......
Union	6,260	80	12.7	111.9	47.9	15.9	......	15.9	......	......	31.9	31.9	......	31.9	31.9	......	127.8	127.8	......
Vermillion	19,226	318	16.5	98.8	5.2	26.0	52.0	20.8	......	20.8	171.6	171.6	......	......	20.8	20.8	83.2	166.4	......
Vigo	90,519	1,296	14.3	131.5	24.3	30.9	29.8	4.4	2.2	21.0	134.8	88.2	88.2	1.0	6.6	16.5	69.6	140.3	......
Warren	10,899	120	11.0	137.7	9.1	......	9.1	......	......	27.5	55.0	27.5	......	......	......	9.1	146.8	73.4	......
Wayne	44,235	675	15.2	106.3	22.6	4.5	4.5	13.5	2.2	4.5	144.7	27.1	......	2.2	6.7	9.0	110.8	131.1	......
Southern Counties	663,757	8,642	13.0	151.5	25.7	33.4	27.1	4.9	1.2	11.9	101.1	69.2	2.4	1.0	23.0	5.2	66.4	86.0	.3
Clark	30.260	379	12.5	132.2	39.6	23.1	16.5	......	......	3.3	69.3	62.7	......	......	16.5	3.3	66.0	99.1	......
Crawford	12,057	131	10.8	240.5	41.4	49.7	16.5	......	......	......	58.0	49.7	......	......	24.8	......	49.7	41.4	......
Daviess	27,747	323	11.6	158.6	10.8	32.4	39.6	10.8	......	10.8	100.9	43.2	7.2	......	7.2	......	46.8	72.0	......
Dearborn	21,472	276	12.8	130.5	27.9	......	37.2	......	......	4.6	135.1	27.9	......	......	23.2	4.6	79.1	93.1	......
Dubois	19,843	197	9.9	115.9	15.1	25.2	20.1	5.0	......	......	90.7	80.6	......	......	40.3	......	30.2	70.5	......
Floyd	30.310	412	13.5	207.9	23.1	19.8	6.5	9.8	......	16.5	75.8	36.2	6.5	......	46.1	6.5	59.3	115.5	......
Gibson	30,177	369	12.2	162.4	16.5	36.4	23.2	3.3	......	13.2	99.4	86.1	......	......	33.1	......	26.5	89.4	......
Greene	37,707	518	13.7	137.9	26.5	37.1	39.7	2.6	......	34.4	172.4	127.3	7.9	2.6	42.4	7.9	55.6	82.2	2.6
Harrison	20,232	227	11.2	212.6	29.6	49.4	19.7	19.7	......	......	59.3	34.6	......	......	24.7	14.8	69.2	34.6	......
Jackson	24,727	340	13.7	149.7	40.4	16.1	8.0	......	......	28.3	88.9	105.2	4.0	......	24.2	8.0	64.7	72.8	......
Jefferson	20,483	392	19.1	200.2	29.3	19.5	......	......	......	4.8	112.3	53.7	......	......	24.4	4.8	136.8	141.6	......
Jennings	14,212	182	12.8	133.7	28.1	49.2	7.0	35.1	......	7.0	70.3	42.2	7.0	......	28.1	7.0	84.4	77.4	......
Knox	39,816	548	13.7	113.0	17.5	37.6	75.3	2.5	7.5	15.0	138.2	90.4	......	2.5	12.5	15.0	50.2	105.5	......
Lawrence	31,114	393	12.6	147.9	32.1	35.3	16.0	6.4	......	12.8	83.5	99.6	......	......	16.0	......	83.5	93.2	......
Martin	13,027	158	12.2	215.0	38.3	38.3	15.3	7.6	......	......	61.4	30.7	......	......	30.7	......	61.4	23.0	......

TABLE No. 5—Concluded.

STATE AND COUNTIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
Ohio	4,329	59	13.6	115.5	......	......	23.1	23.1	......	......	115.5	23.1	......	......	23.1	......	92.4	92.4	......
Orange	17,225	214	12.4	174.3	23.2	46.4	46.4	5.8	......	......	87.1	81.3	......	......	11.6	......	52.2	81.3	......
Perry	18,146	224	12.3	163.5	5.5	33.0	22.0	5.5	......	22.0	121.2	27.5	16.5	......	33.0	......	49.4	88.1	......
Pike	19,684	250	12.7	142.3	25.4	25.4	55.9	5.0	......	25.4,	76.2	76.2	5.0	......	25.4	5.0	50.8	76.2	......
Posey	21,713	238	10.9	133.6	18.4	27.6	23.0	9.2	......	27.6	64.4	64.4	......	4.6	13.8	......	96.7	64.4	......
Ripley	19,528	221	11.3	148.5	30.7	5.1	10.2	5.1	10.2	5.1	87.0	40.9	......	5.1	5.1	5.1	56.3	76.8	......
Scott	8,324	99	11.8	132.2	36.0	24.0	......	......	......	......	120.2	24.0	......	......	12.0	......	36.0	60.0	......
Spencer	20,676	261	12.6	149.9	29.0	43.5	38.6	4.8	......	4.8	111.2	53.1	9.6	4.8	23.6	4.8	67.9	82.1	......
Sullivan	33,082	398	12.0	96.7	21.1	42.3	39.2	3.0	......	12.0	87.6	130.0	3.0	......	9.0	12.0	63.4	96.7	......
Switzerland	9,914	125	12.6	80.7	40.3	......	......	......	......	......	100.9	30.2	......	......	30.2	......	100.9	50.4	......
Vanderburgh	78,502	1,222	15.5	187.2	28.0	38.2	21.6	2.5	......	7.6	131.2	77.7	......	......	17.4	6.3	86.6	110.8	1.2
Warrick	22,005	261	11.8	122.7	27.2	54.5	45.4	......	......	13.6	90.9	59.0	......	9.0	27.2	9.0	63.6	68.1	......
Washington	17,445	225	12.9	149.1	22.9	51.6	17.2	......	17.2	17.2	63.0	28.6	......	......	34.4	5.7	80.2	63.0	......
Urban	1,184,391	17,234	14.5	134.6	28.1	26.6	22.7	3.7	3.2	10.6	117.6	77.6	1.4	1.4	11.9	10.1	80.8	120.5	.08
Rural	1,546,115	18,537	11.9	118.0	18.1	21.7	16.1	4.4	2.2	8.6	93.4	45.6	1.2	1.9	18.0	7.1	68.5	85.2	.7

TABLE No. 6.

Deaths in Indiana by Cities, for Year 1912.

CITIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	IMPORTANT AGES.						DEATHS FROM IMPORTANT CAUSES.																
				Under 1 Year.	1 to 4 Inclusive.	5 to 9 Inclusive.	10 to 14 Inclusive.	15 to 19 Inclusive.	65 Years and Over.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.	Deaths in Institutions.
Cities of the First Class, Population 100,000 and over	240,098	3,688	15.3	451	197	51	60	99	930	366	87	47	35	7	16	3	320	122	2	3	20	27	218	289	....	2,126
Indianapolis	240,098	3,688	15.3	451	197	51	60	99	930	366	87	47	35	7	16	3	320	122	2	3	20	27	218	289	....	2,126
Cities of the Second Class, Population 45,000 to 100,000	253,337	3,371	13.3	498	186	78	47	95	858	331	60	69	55	4	2	19	277	168	3	1	20	32	221	263	....	1,848
Evansville	70,711	953	13.4	84	50	21	15	30	231	109	15	24	16	....	....	5	76	48	....	....	9	5	59	74	....	513
Fort Wayne	65,814	815	12.3	108	29	15	15	18	244	65	12	10	6	2	1	2	70	20	....	1	7	5	72	52	....	490
Terre Haute	60,305	886	14.5	145	51	22	13	24	224	80	19	20	19	1	....	6	85	51	....	....	4	11	44	86	....	460
South Bend	56,507	717	12.6	161	56	20	4	23	159	77	14	15	12	1	1	6	46	49	3	....	....	11	46	51	....	385
Cities of the Third Class, Population 20,000 to 45,000	132,435	1,949	14.7	273	102	42	35	60	609	181	37	39	27	8	2	13	14	88	3	3	21	10	97	190	....	1,090
Muncie	24,311	311	12.7	50	13	9	7	17	84	31	7	5	7	....	....	2	22	15	....	....	3	1	12	35	....	171
Richmond	22,733	303	13.3	40	11	5	6	8	117	26	7	2	....	5	....	2	29	7	....	1	3	....	15	20	....	186
Anderson	22,706	297	13.0	39	21	12	4	7	86	21	8	6	10	....	....	....	24	5	....	2	4	3	20	22	....	172
Hammond	21,779	339	15.5	80	27	7	4	5	40	22	3	15	5	2	1	2	27	36	....	....	....	3	12	55	....	156
New Albany	20,629	305	14.7	30	10	5	5	8	129	45	6	5	2	1	....	4	15	11	2	....	9	2	14	22	....	167
Lafayette	20,277	394	19.4	34	20	4	9	15	153	36	6	6	3	....	1	3	23	14	1	....	2	1	24	36	....	238

TABLE No. 6—Continued

CITIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	Important Ages.						Deaths from Important Causes.																
				Under 1 Year.	1 to 4 Inclusive.	5 to 9 Inclusive.	10 to 14 Inclusive.	15 to 19 Inclusive.	65 Years and Over.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.	Deaths in Institutions.
Cities of the Fourth Class, Population 10,000 to 20,000...	224,885	3,330	14.8	710	258	81	48	76	804	258	52	96	69	10	5	23	336	281	2	3	22	19	155	324	....	1,675
Elkhart............	19,691	223	11.3	29	12	5	6	4	74	17	....	3	1	....	....	....	20	8	....	....	2	....	22	15	....	135
East Chicago........	19,666	329	16.7	155	60	8	2	1	14	15	3	9	2	4	1	8	57	77	1	1	2	....	7	32	....	110
Marion............	19,561	277	14.1	46	27	5	1	10	79	24	3	6	11	....	....	....	21	14	....	....	2	3	12	19	....	162
Michigan City.......	19,444	254	13.0	54	10	10	1	11	63	27	4	14	1	....	....	2	28	18	1	....	1	2	10	25	....	121
Logansport..........	19,334	310	16.0	40	7	2	6	11	95	25	4	16	3	....	....	1	25	13	....	....	3	3	17	28	....	172
Gary...............	17,802	397	22.3	132	41	12	3	9	20	24	4	8	17	....	1	1	52	69	....	....	2	1	5	88	....	125
Kokomo............	17,650	253	14.3	40	17	9	4	4	80	28	6	10	5	1	1	....	30	12	....	....	2	1	18	14	....	125
Vincennes..........	15,359	245	15.9	38	24	9	7	7	60	20	6	4	17	....	2	....	30	16	....	....	....	3	7	21	....	119
Mishawaka..........	12,518	129	10 3	28	12	4	3	2	29	9	2	9	2	1	....	4	5	8	....	....	1	1	4	12	....	71
Peru...............	11,154	141	12.6	16	8	2	2	3	53	7	3	3	1	....	....	2	10	3	....	....	1	2	7	17	....	85
Elwood.............	11,028	123	11.1	26	6	4	1	2	36	15	2	1	2	....	....	....	8	6	....	....	2	....	8	8	....	71
Laporte............	10,866	227	20.8	39	10	6	3	4	71	9	4	6	2	4	....	1	23	19	....	2	....	3	9	16	....	129
Jeffersonville.........	10,412	166	15.9	18	11	1	3	4	52	19	6	4	3	....	....	....	8	6	....	....	1	....	11	7	....	101
Huntington..........	10,350	141	13.6	24	6	1	3	4	38	12	2	1	....	....	....	3	11	......	....	....	2	....	11	13	....	86
New Castle..........	10,050	115	11.4	24	7	3	3	......	40	7	3	2	2	....	....	1	8	12	....	....	1	....	7	9	....	63
Cities of the Fifth Class, Population under 10,000............	333,636	4,896	14.6	768	337	116	78	115	1,631	459	113	65	83	15	13	63	321	261	7	7	58	32	267	362	1	2,774
Shelbyville..........	9,733	160	16.4	22	8	8	1	3	49	16	3	....	9	1	....	....	11	3	....	....	3	....	4	12	....	98
Crawfordsville.......	9,643	140	14.5	14	10	3	3	4	49	9	4	2	5	1	....	1	5	5	....	....	3	2	6	10	....	87
Brazil..............	9,495	137	14.4	24	11	3	2	4	33	14	3	....	2	....	2	2	9	9	....	....	1	2	2	13	....	78
Bloomington.........	9,075	145	15.9	26	23	4	3	1	27	21	1	3	1	....	....	2	15	14	....	....	1	1	5	15	....	66
Bedford............	8,976	124	13.8	26	9	4	3	6	23	12	2	3	....	2	....	2	6	11	....	....	2	....	10	13	....	61

Columbus	8,881	125	14.0	22	5	3	2	2	46	19	2	1	....	....	....	4	9	3	....	1	3	8	12	10	1	57
Frankfort	8,787	120	13.6	17	8	4	6	2	37	11	4	1	5	....	....	1	8	5	....	1	2	1	8	11	....	62
Wabash	8,693	108	12.4	13	3	4	5	2	48	9	....	2	1	....	1	4	4	3	....	1	1	1	7	17	....	57
Goshen	8,584	107	12.4	15	7	5	3	1	35	6	2	1	4	....	....	....	9	5	....	1	2	....	7	6	....	64
Washington	7,854	104	13.2	16	11	2	1	2	32	13	2	1	2	1	....	3	9	3	....	....	1	....	5	7	....	57
Connersville	7,828	112	14.3	16	3	2	....	2	40	10	1	....	....	1	....	....	5	5	....	....	....	....	8	5	....	77
Valparaiso	7,057	65	9.2	7	2	....	2	1	27	....	1	....	1	....	1	....	5	1	....	....	....	....	6	6	....	44
Madison	6,934	114	16.4	14	5	....	2	......	48	12	1	1	....	....	....	....	8	4	....	....	1	....	10	13	....	64
Whiting	6,847	94	13.7	47	14	....	....	2	4	8	2	2	....	....	1	1	5	22	....	....	1	....	1	8	....	43
Clinton	6,560	132	20.1	47	16	7	3	3	13	5	1	1	5	3	....	1	12	24	....	....	2	3	2	20	....	53
Princeton	6,488	95	14.6	20	5	3	1	2	19	15	....	1	1	....	....	....	5	12	....	....	2	....	1	9	....	49
Seymour	6,305	113	17.9	17	11	4	....	2	39	8	4	1	2	....	....	4	7	6	....	....	....	....	9	5	....	67
Hartford City	6,262	68	10.8	15	2	....	1	3	21	9	....	1	....	....	....	2	8	4	....	....	....	1	2	3	....	38
Linton	6,189	69	11.1	15	10	1	1	2	13	7	3	2	....	....	....	2	5	4	1	....	5	1	2	3	....	34
Mt. Vernon	5,606	72	12.8	13	5	2	....	3	15	11	2	....	3	2	....	2	1	4	....	....	....	....	7	6	....	34
Lebanon	5,574	86	15.4	7	8	3	1	4	33	13	1	....	2	....	4	....	3	2	....	....	....	1	1	4	....	55
Greensburg	5,458	121	22.1	19	5	1	....	4	51	15	....	3	....	....	1	1	10	7	....	....	1	3	9	6	....	65
Portland	5,163	72	13.9	9	9	1	....	2	20	4	2	1	2	....	....	....	4	6	....	....	....	....	2	5	....	46
Kendallville	5,143	60	11.6	16	1	....	....	......	22	2	....	....	....	....	....	....	7	4	....	....	....	....	6	3	....	38
Noblesville	5,101	71	13.9	9	5	3	1	3	27	9	....	....	1	....	....	....	....	5	....	....	....	....	2	5	....	49
Alexandria	5,096	61	11.9	12	1	4	3	1	20	4	....	1	5	....	....	....	3	1	....	....	....	1	2	4	....	40
Bluffton	5,037	84	16.6	10	9	1	1	2	30	8	1	4	....	....	....	5	6	1	....	....	....	....	4	5	....	50
Rushville	4,963	103	20.7	14	9	2	2	2	31	12	3	1	....	....	1	4	6	4	....	....	1	1	8	4	....	58
Martinsville	4,578	89	19.4	14	1	3	2	2	30	9	3	3	1	....	....	....	6	3	....	....	2	....	2	4	....	56
Franklin	4,551	53	11.6	6	4	1	1	2	25	7	2	....	....	....	1	....	6	2	....	....	....	....	1	3	....	31
Decatur	4,503	54	11.9	12	1	3	1	1	16	3	3	2	....	....	....	1	3	3	....	....	2	1	3	3	....	30
Aurora	4,486	71	15.8	11	3	2	2	4	28	6	3	2	5	....	....	....	7	3	....	....	....	1	4	4	....	42
Warsaw	4,474	66	14.7	8	2	....	....	......	32	3	....	1	....	....	....	1	2	1	1	....	2	....	3	3	....	49
Greenfield	4,448	76	17.0	8	4	4	....	2	35	3	6	1	3	....	....	....	9	1	....	....	1	2	3	4	....	43
Winchester	4,322	57	13.1	7	4	2	1	......	19	4	3	....	3	....	....	1	1	4	....	....	....	....	3	5	....	33
Sullivan	4,214	56	13.2	13	4	1	1	1	16	3	4	....	1	....	....	....	4	5	....	....	....	....	5	3	....	31
Garrett	4,172	60	14.3	10	3	1	1	4	15	4	4	1	....	....	....	2	4	3	....	....	1	....	3	7	....	31
Tipton	4,106	55	13.4	4	3	1	....	......	20	8	1	....	....	....	....	....	3	1	....	....	1	....	4	5	....	32
Boonville	4,028	80	19.8	13	10	3	1	1	16	6	1	2	6	....	....	1	5	5	....	1	1	1	7	5	....	39
Auburn	3,971	55	13.8	6	4	....	1	1	24	5	2	....	....	....	....	1	3	1	....	....	1	....	4	4	....	34
Lawrenceburg	3,930	50	12.7	8	4	1	1	1	20	1	1	....	2	....	....	....	5	3	....	....	1	....	5	4	....	28
Plymouth	3,856	60	15.5	11	2	....	1	2	28	5	3	....	....	....	....	....	2	2	1	....	1	....	3	5	....	38
Greencastle	3,802	49	12.8	5	3	1	1	1	16	6	2	1	....	....	....	....	2	1	....	....	2	....	7	2	....	26
Mitchell	3,604	53	14.7	7	4	1	2	1	16	7	2	2	1	....	....	....	2	4	....	....	....	....	2	6	....	27
Columbia City	3,495	51	14.5	1	3	....	1	1	25	5	1	1	....	....	....	1	4	1	....	....	....	1	6	2	....	29

TABLE No. 6—Concluded.

CITIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	Important Ages.						Deaths from Important Causes.																
				Under 1 Year.	1 to 4 Inclusive.	5 to 9 Inclusive.	10 to 14 Inclusive.	15 to 19 Inclusive.	65 Years and Over.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.	Deaths in Institutions.
Tell City	3,437	52	15.1	6	4	2	1	1	23	9	....	....	1	....	....	1	6	2	2	....	2	....	3	2	....	24
Attica	3,368	71	21 0	8	3	1	2	2	32	2	3	....	1	....	....	1	4	3	....	....	2	2	5	5	....	43
Rochester	3,364	53	15 7	6	1	1	1	2	18	3	1	....	....	....	....	....	5	2	....	....	....	....	1	2	....	39
Jasonville	3,295	62	29.0	28	7	3	1	......	10	5	2	2	1	1	....	4	8	14	2	....	2	....	2	....	....	19
Union City	3,257	51	15.6	3	3	1	1	1	24	1	2	1	1	....	....	....	5	......	....	....	....	1	5	3	....	32
Gas City	3,224	25	7.7	7	3	....	....	2	5	....	....	....	2	....	....	....	3	1	....	....	1	....	2	3	....	13
Dunkirk	3,031	38	12.5	8	3	2	....	......	9	2	2	....	2	....	....	2	3	......	....	....	....	....	1	5	....	21
North Vernon	2,924	31	10.6	......	1	1	....	2	12	3	1	....	....	2	....	....	1	......	....	....	....	....	4	4	....	16
Montpelier	2,786	28	10.0	3	4	....	....	1	12	3	3	....	....	....	....	....	....	1	....	....	....	....	2	2	....	17
Bicknell	2,749	42	15.2	9	8	2	....	1	10	4	....	....	....	....	....	4	3	4	....	1	1	1	1	4	....	19
Rockport	2,736	45	16.4	5	1	1	1	1	19	5	1	4	1	....	....	....	4	3	....	....	....	....	1	2	....	24
Angola	2,656	47	17.7	2	1	....	....	1	22	6	....	1	....	....	....	....	2	......	....	....	....	....	....	4	....	34
Crown Point	2,545	40	15.7	4	1	....	....	......	20	2	....	....	....	....	....	1	6	......	....	1	....	....	1	3	....	20
Huntingburg	2,464	23	9.3	3	2	....	....	2	9	5	....	1	1	....	....	....	2	2	....	....	....	....	1	2	....	9
Rensselaer	2,406	34	14.1	1	......	....	....	1	15	3	3	....	....	....	....	....	1	......	....	....	....	....	4	4	....	19
Loogootee	2,231	44	19.7	4	5	1	1	3	7	8	2	2	....	1	....	....	2	2	....	....	....	....	2	....	....	25
Batesville	2,227	28	12.5	6	2	1	2	......	8	4	3	....	1	....	1	....	1	2	....	....	....	1	1	2	....	12
Monticello	2,174	35	16.1	7	1	1	1	1	16	5	2	....	....	....	....	....	1	1	....	....	....	....	1	2	....	23
Ligonier	2,173	33	15.1	1	......	....	....	1	21	....	....	....	....	....	....	1	1	......	....	....	....	....	4	2	....	
Delphi	2,163	26	12.0	......	2	....	....	......	15	2	1	....	....	....	....	....	2	......	....	....	....	....	3	....	....	
Cannelton	2,130	32	15.0	3	1	....	....	2	13	3	....	2	1	....	....	....	1	......	....	....	....	....	....	....	....	25
Covington	2,069	35	16 9	2	4	....	1	......	18	....	....	2	....	....	....	....	....	2	....	....	....	....	2	3	....	26
Butler City	1,818	24	13.2	......	2	....	....	......	11	5	....	....	....	....	....	....	3	......	....	....	....	....	2	2	....	12
Veedersburg	1,768	39	22.0	5	1	1	1	2	13	6	1	1	....	....	....	....	1	2	....	....	2	....	....	4	....	22
Rising Sun	1,513	40	26.4	1	2	....	1	......	24	3	....	....	....	....	....	....	3	......	....	....	1	....	3	4	....	26
Vevay	1,256	21	16.7	......	......	....	1	......	14	8	....	....	....	....	....	....	....	......	....	....	....	....	3	1	....	14

TABLE No. 7.

Death Rates by Cities, for the Year 1912.

CITIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
Cities of the First Class, Population 100,000 and over...	240,098	3,688	15.3	152.5	36.2	19.5	14.5	2.9	6.6	1.2	133.3	50.8	.8	1.2	8.3	11.2	90.8	122.9	......
Indianapolis..................	240,098	3,688	15.3	152.5	36.2	19.5	14.5	2.9	6.6	1.2	133.3	50.8	.8	1.2	8.3	11.2	90.8	122.9	......
Cities of the Second Class, Population 45,000 to 100,000...	253,337	3,371	13.3	130.7	23.6	27.2	21.7	1.5	.7	7.5	109.4	66.3	1.1	.3	7.8	12.6	87.1	103.9	......
Evansville	70,711	953	13.4	154.1	21.2	33.9	22.6	......	......	7.0	107.5	67.8	......	......	12.7	......	83.4	104.7	......
Ft. Wayne..................	65,814	815	12.3	98.7	18.2	15.2	9.1	3.0	1.5	3.0	106.4	30.3	......	1.5	10.6	7.5	109.4	79.0	......
Terre Haute..................	60,305	886	14.5	132.7	31.5	33.1	31.5	1.6	......	9.7	141.0	84.5	......	......	6.6	18.2	72.9	142.6	......
South Bend..................	56,507	717	12.6	136.3	24.7	26.5	21.2	17.7	17.7	10.6	81.4	86.7	5.3	......	19.4	......	81.4	90.2	......
Cities of the Third Class, Population 20,000 to 45,000....	132,435	1,949	14.7	136.7	27.9	29.4	20.4	6.0	1.5	9.8	105.8	66.4	2.2	2.2	15.8	7.5	73.2	143.5	......
Muncie..................	24,311	311	12.7	127.5	28.7	20.5	28.7	......	......	8.2	90.5	61.7	......	......	12.3	4.1	49.3	144.0	......
Richmond..................	22,733	303	13.3	114.4	30.8	8.7	......	22.0	......	8.7	127.6	30.8	......	4.3	13.2	......	66.0	87.9	......
Anderson..................	22.706	297	13.0	92.5	35.2	26.4	44.0	......	......	......	105.8	22.0	......	8.8	17.6	13.2	88.1	96.9	......
Hammond..................	21,779	339	15.5	101.0	13.7	68.8	22.9	9.1	4.5	9.1	124.0	165.3	......	......	......	13.7	55.0	252.5	......
New Albany..................	20,629	305	14.7	218.1	29.0	24.2	9.6	4.8	......	19.8	72.7	53.3	9.6	......	43.6	9.6	67.8	106.7	......
Lafayette..................	20,277	394	19.4	177.5	29.5	29.5	14.7	......	4.9	14.7	113.4	69.0	4.9	......	9.8	4.9	118.4	177.5	......

TABLE No. 6—Concluded.

CITIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	Important Ages.						Deaths from Important Causes.																
				Under 1 Year.	1 to 4 Inclusive.	5 to 9 Inclusive.	10 to 14 Inclusive.	15 to 19 Inclusive.	65 Years and Over.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.	Deaths in Institutions.
Teli City	3,437	52	15.1	6	4	2	1	1	23	9	....	....	1	....	....	1	6	2	2	....	2	....	3	2	....	24
Attica	3,368	71	21 0	8	3	1	2	2	32	2	3	....	1	....	....	1	4	3	....	....	2	2	5	5	....	43
Rochester	3,364	53	15.7	6	1	1	1	2	18	3	1	....	....	....	....	....	5	2	....	....	....	....	1	2	....	39
Jasonville	3,295	62	29.0	28	7	3	1	......	10	5	2	2	1	1	....	4	8	14	2	....	2	....	2	....	....	19
Union City	3,257	51	15.6	3	3	1	1	1	24	1	2	1	1	....	....	....	5	......	....	....	....	1	5	3	....	32
Gas City	3,224	25	7.7	7	3	....	....	2	5	....	....	....	2	....	....	....	3	1	....	....	1	....	2	3	....	13
Dunkirk	3,031	38	12.5	8	3	2	....	......	9	2	2	....	2	....	....	2	3	......	....	....	....	....	1	5	....	21
North Vernon	2,924	31	10.6	......	1	1	....	2	12	3	1	....	....	2	....	....	1	......	....	....	....	....	4	4	....	16
Montpelier	2,786	28	10.0	3	4	....	....	1	12	3	3	....	....	....	....	....	....	1	....	....	....	....	2	2	....	17
Bicknell	2,749	42	15.2	9	8	2	....	1	10	4	....	....	....	....	....	4	3	4	....	1	1	1	1	4	....	19
Rockport	2,736	45	16.4	5	1	1	1	1	19	5	1	4	1	....	....	....	4	3	....	....	....	....	1	2	....	24
Angola	2,656	47	17.7	2	1	....	....	1	22	6	....	1	....	....	....	....	2	......	....	....	....	....	....	4	....	34
Crown Point	2,545	40	15.7	4	1	....	....	......	20	2	....	....	....	....	....	1	6	......	....	1	....	....	1	3	....	26
Huntingburg	2,464	23	9.3	3	2	....	....	2	9	5	....	1	1	....	....	....	2	2	....	....	....	....	1	2	....	9
Rensselaer	2,406	34	14.1	1	......	....	....	1	15	3	3	....	....	....	....	....	1	......	....	....	....	....	4	4	....	19
Loogootee	2,231	44	19.7	4	5	1	1	3	7	8	2	2	....	1	....	....	2	2	....	....	....	....	2	....	....	25
Batesville	2,227	28	12.5	6	2	1	2	......	8	4	3	....	1	....	1	....	1	2	....	....	....	1	1	2	....	12
Monticello	2,174	35	16.1	7	1	1	1	1	16	5	2	....	....	....	....	....	1	1	....	....	....	....	1	2	....	23
Ligonier	2,173	33	15.1	1	......	....	....	1	21	....	....	....	....	....	....	1	1	......	....	....	....	....	4	2	....	
Delphi	2,163	26	12.0	......	2	....	....	......	15	2	1	....	....	....	....	....	2	......	....	....	....	....	3	....	....	
Cannelton	2,130	32	15.0	3	1	....	....	2	13	3	....	2	1	....	....	....	1	......	....	....	....	....	....	....	....	25
Covington	2,069	35	16.9	2	4	....	1	......	18	....	....	2	....	....	....	....	....	2	....	....	....	....	2	3	....	26
Butler City	1,818	24	13.2	......	2	....	....	......	11	5	....	....	....	....	....	....	3	......	....	....	....	....	2	2	....	12
Veedersburg	1,768	39	22.0	5	1	1	1	2	13	6	1	1	....	....	....	....	1	2	....	....	2	....	....	4	....	22
Rising Sun	1,513	40	26.4	1	2	....	1	......	24	3	....	....	....	....	....	....	3	......	....	....	1	....	3	4	....	26
Vevay	1,256	21	16.7	......	......	....	1	......	14	3	....	....	....	....	....	....	....	......	....	....	....	....	3	1	....	14

TABLE No. 7.

Death Rates by Cities, for the Year 1912.

CITIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	Deaths from Important Causes.														
				Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
Cities of the First Class, Population 100,000 and over...	240,098	3,688	15.3	152.5	36.2	19.5	14.5	2.9	6.6	1.2	133.3	50.8	.8	1.2	8.8	11.2	90.8	122.9	......
Indianapolis	240,098	3,688	15.3	152.5	36.2	19.5	14.5	2.9	6.6	1.2	133.3	50.8	.8	1.2	8.3	11.2	90.8	122.9	......
Cities of the Second Class, Population 45,000 to 100,000...	253,337	3,371	13.3	130.7	23.6	27.2	21.7	1.5	.7	7.5	109.4	66.3	1.1	.3	7.8	12.6	87.1	103.9	......
Evansville	70,711	953	13.4	154.1	21.2	33.9	22.6	......	......	7.0	107.5	67.8	......	......	12.7	......	83.4	104.7	......
Ft. Wayne	65,814	815	12.3	98.7	18.2	15.2	9.1	3.0	1.5	3.0	106.4	30.3	......	1.5	10.6	7.5	109.4	79.0	......
Terre Haute	60,305	886	14.5	132.7	31.5	33.1	81.5	1.6	......	9.7	141.0	84.5	......	......	6.6	18.2	72.9	142.6	......
South Bend	56,507	717	12.6	136.3	24.7	26.5	21.2	17.7	17.7	10.6	81.4	86.7	5.3	......	19.4	......	81.4	90.2	......
Cities of the Third Class, Population 20,000 to 45,000....	132,435	1,949	14.7	136.7	27.9	29.4	20.4	6.0	1.5	9.8	105.8	66.4	2.2	2.2	15.8	7.5	73.2	143.5	......
Muncie	24,311	311	12.7	127.5	28.7	20.5	28.7	......	......	8.2	90.5	61.7	......	......	12.3	4.1	49.3	144.0	......
Richmond	22,733	303	13.3	114.4	30.8	8.7	......	22.0	......	8.7	127.6	30.8	......	4.3	13.2	......	66.0	87.9	......
Anderson	22.706	297	13.0	92.5	35.2	26.4	44.0	......	......	......	105.8	22.0	......	8.8	17.6	13.2	88.1	96.9	......
Hammond	21,779	339	15.5	101.0	13.7	68.8	22.9	9.1	4.5	9.1	124.0	165.3	......	......	......	13.7	55.0	252.5	......
New Albany	20,629	305	14.7	218.1	29.0	24.2	9.6	4.8	......	19.8	72.7	53.3	9.6	......	43.6	9.6	67.8	106.7	......
Lafayette	20,277	394	19.4	177.5	29.5	29.5	14.7	......	4.9	14.7	113.4	69.0	4.9	......	9.8	4.9	118.4	177.5	......

TABLE No. 7—Continued.

CITIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	Deaths from Important Causes.															
				Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
Cities of the Fourth Class, Population 10,000 to 20,000....	224,885	3,330	14.8	114.7	23.1	42.6	30.6	4.4	2.2	10.2	149.4	125.0	.8	1.3	9.7	8.4	68.9	144.1	......
Elkhart......................	19,691	223	11.3	86.3	......	15.2	5.0	......	......	......	101.6	40.6	......	......	10.1	......	111.8	76.1	......
East Chicago.................	19,666	329	16.7	76.2	15.2	45.7	10.1	20.3	5.0	40.6	289.8	391.5	5.0	5.0	10.1	......	33.9	162.7	......
Marion.......................	19,561	277	14.1	122.7	15.3	30.6	56.2	......	......	......	107.4	71.5	......	......	10.2	15.3	61.3	97.1	......
Michigan City................	19,444	254	13.0	138.9	20.5	72.0	5.1	......	......	10.2	144.1	92.5	5.1	......	5.1	10.2	51.4	128.6	......
Logansport...................	19,334	310	16.0	129.4	20.6	82.7	15.5	......	......	5.1	129.4	67.2	......	......	15.5	15.5	87.9	144.9	......
Gary.........................	17,802	397	22.3	134.9	22.4	44.9	95.5	......	5.6	5.6	292.2	387.6	......	......	11.2	5.6	28.0	494.4	......
Kokomo.......................	17,650	253	14.3	158.7	34.0	56.6	28.3	5.6	5.6	......	170.0	68.0	......	......	11.3	5.6	102.0	79.3	......
Vincennes....................	15,359	245	15.9	130.2	36.4	26.0	110.7	......	13.0	......	195.3	104.2	......	......	......	19.5	45.5	136.7	......
Mishawaka....................	12,518	129	10.3	71.8	15.9	71.8	15.9	7.9	......	31.9	39.9	63.9	......	......	7.9	7.9	31.9	95.8	......
Peru.........................	11,154	141	12.6	62.7	26.9	26.9	8.9	......	......	17.9	89.6	26.9	......	......	8.9	17.9	62.7	152.5	......
Elwood.......................	11,028	123	11.1	136.0	18.1	9.0	18.1	......	......	......	72.5	54.4	......	......	18.1	......	72.5	72.5	......
Laporte......................	10,866	227	20.8	82.8	36.8	55.2	18.4	36.8	......	9.2	211.6	174.8	......	18.4	......	27.6	88.2	147.2	......
Jeffersonville...............	10,412	166	15.9	182.5	57.6	38.4	28.8	......	......	......	76.8	57.6	......	......	9.6	......	105.7	67.6	......
Huntington...................	10,350	141	13.6	116.0	19.3	9.6	......	......	......	28.9	106.3	......	......	......	19.3	......	106.3	125.6	......
New Castle...................	10,050	115	11.4	69.6	29.8	19.9	19.9	......	......	9.9	79.5	119.4	......	......	9.9	......	69.6	89.5	......
Cities of the Fifth Class, Population under 10,000.......	333,636	4,896	14.6	137.6	33.8	19.4	24.8	4.4	3.8	18.8	96.2	78.2	2.0	2.0	17.3	9.5	90.0	108.5	.2
Shelbyville..................	9,733	160	16.4	164.4	30.8	......	92.4	10.2	......	......	113.0	30.8	......	......	30.8	......	41.1	123.3	......
Crawfordsville...............	9,643	140	14.5	93.3	41.4	20.7	51.8	10.3	......	10.3	51.8	51.8	......	......	31.1	20.7	62.2	103.7	......
Brasil.......................	9,495	137	14.4	147.5	31.6	......	21.0	......	21.0	21.0	94.7	94.7	......	......	10.5	21.0	21.0	136.9	......
Bloomington..................	9,075	145	15.9	231.4	11.0	33.0	11.0	......	......	22.0	165.3	154.3	......	......	11.0	11.0	55.1	165.3	......
Bedford......................	8,976	124	13.8	133.7	22.2	33.4	......	22.2	......	22.2	66.8	122.6	......	......	22.2	......	111.4	144.8	......

Columbus	8,881	125	14.0	214.0	22.5	11.2	......	......	......	45.0	101.4	33.7	......	11.2	33.7	33.7	135.1	112.6	11.2
Frankfort	8,787	120	13.6	125.2	45.5	11.3	56.9	......	......	11.3	91.0	56.9	......	11.3	22.7	11.3	91.0	125.2	......
Wabash	8,693	108	12.4	103.5	......	23.0	11.5	......	11.5	46.0	46.0	34.5	......	11.5	11.5	11.5	80.5	195.5	......
Goshen	8,584	107	12.4	69.9	23.3	11.6	46.6	......	......	......	104.8	58.2	......	11.6	23.3	......	81.5	69.9	......
Washington	7,854	104	13.2	165.5	25.4	12.7	25.4	12.7	......	38.1	114.6	38.1	......	......	12.7	......	63.6	89.1	......
Connersville	7,828	112	14.3	127.7	12.7	......	......	12.7	......	......	63.8	63.8	......	......	......	......	102.2	63.8	......
Valparaiso	7,057	65	9.2	....	14.1	......	14.1	......	14.1	......	70.8	14.1	......	......	......	......	85.0	85.0	......
Madison	6,934	114	16.4	173.1	14.4	14.4	......	......	......	......	115.4	57.6	......	......	14.4	......	144.2	187.5	......
Whiting	6,847	94	13.7	116.9	29.2	29.2	......	......	14.6	14.6	73.0	321.3	......	......	14.6	......	14.6	116.9	......
Clinton	6,560	132	20.1	76.2	15.2	15.2	76.2	45.7	......	15.2	182.9	36.5	......	......	30.4	45.7	30.4	304.9	......
Princeton	6,488	95	14.6	231.2	15.4	15.4	......	......	......	......	77.0	185.0	......	......	30.8	......	15.4	138.7	......
Seymour	6,305	113	17.9	126.9	63.4	15.8	31.7	......	......	63.4	111.0	95.1	......	......	......	......	142.8	79.3	......
Hartford City	6,262	68	10.8	143.7	......	15.9	......	......	......	31.9	127.8	63.8	......	......	......	15.9	31.9	47.9	......
Linton	6,189	69	11.1	113.1	48.4	32.3	......	......	......	32.3	80.8	64.6	16.1	......	80.8	16.1	32.3	48.4	......
Mt. Vernon	5,606	72	12.8	196.2	35.6	......	53.5	35.6	......	35.6	17.8	71.3	......	......	......	......	124.9	107.0	......
Lebanon	5,574	86	15.4	233.3	17.9	......	35.8	......	71.7	......	53.8	35.8	......	......	......	17.9	17.9	71.7	......
Greensburg	5,458	121	22.1	274.9	......	54.9	......	......	18.3	18.3	183.3	128.3	......	......	18.3	54.9	164.9	110.0	......
Portland	5,163	72	13.9	77.4	38.7	19.3	38.7	......	......	......	77.4	116.2	......	......	......	......	38.7	96.8	......
Kendallville	5,143	60	11.6	38.8	......	......	......	......	......	......	136.1	77.7	......	......	......	......	116.7	58.3	......
Noblesville	5,101	71	13.9	176.4	......	......	19.6	......	......	......	....	98.0	......	......	......	......	39.2	98.0	......
Alexandria	5,096	61	11.9	78.5	......	19.6	98.1	......	......	......	58.8	19.6	......	......	......	19.6	39.2	78.5	......
Bluffton	5,037	84	16.6	158.8	19.8	79.4	......	......	......	99.2	119.1	19.8	......	......	......	......	79.4	99.2	......
Rushville	4,963	103	20.7	241.8	60.4	20.1	......	......	20.1	80.6	120.9	80.6	......	......	20.1	20.1	161.2	80.6	......
Martinsville	4,578	89	19.4	196.5	65.5	65.5	21.8	......	......	......	131.1	65.5	......	......	43.6	......	43.6	87.3	......
Franklin	4,551	53	11.6	153.8	43.9	......	......	......	21.9	......	131.9	43.9	......	......	......	......	21.9	65.9	......
Decatur	4,503	54	11.9	66.6	66.6	44.4	......	......	......	22.2	66.6	66.6	......	......	44.4	22.2	66.6	66.6	......
Aurora	4,486	71	15.8	133.7	66.8	44.5	111.4	......	......	......	156.0	66.8	......	......	......	22.2	89.1	89.1	......
Warsaw	4,474	66	14.7	67.0	......	22 3	......	......	......	22.3	44.7	22.3	22.3	......	44.7	......	67.0	67.0	......
Greenfield	4,448	76	17.0	67.4	134.9	22.4	67.4	......	......	......	202.3	22.4	......	......	22.4	44.9	67.4	89.9	......
Winchester	4,322	57	13.1	90.4	69 4	......	69.4	......	......	23.1	23.1	90.4	......	......	......	......	69.4	115.7	......
Sullivan	4,214	56	13.2	71.1	94.9	......	23.7	......	......	......	94.9	118.6	......	......	......	......	118.6	71.1	......
Garrett	4,172	60	14.3	93.7	93.7	23.9	......	......	......	47.9	93.7	71.9	......	......	23.9	......	71.9	167.8	......
Tipton	4,106	55	13.4	194.8	24.3	......	......	......	......	......	73.0	24.3	......	......	24.3	......	97.4	121.8	......
Booneville	4,028	80	19.8	149.0	24.8	49.6	149.0	......	......	24.8	124.1	124.1	......	24.8	24.8	24.8	173.8	124.1	......
Auburn	3,971	55	13.8	125.9	50.3	......	......	......	......	25.1	75 6	25.1	......	......	25.1	......	100.7	100.7	......
Lawrenceburg	3,930	50	12.7	25.4	25.4	......	50.8	......	......	......	127.2	76.3	......	......	25.4	......	127.2	101.8	......
Plymouth	3,856	60	15.5	129.7	77.8	......	......	......	......	......	51.8	51.8	25.9	......	25.9	......	77.8	129.7	......
Greencastle	3,802	49	12.8	157.8	52.6	25.7	......	......	......	......	52.6	25.7	......	......	52.6	......	184.1	52.6	......
Mitchell	3,604	53	14.7	194.3	55.4	55.4	27.7	......	......	......	55.4	111.0	......	......	......	......	55.4	166.5	......
Columbia City	3,495	51	14.5	143.1	28 6	28.6	......	......	......	28.6	114.5	28.6	......	......	......	28 6	171.7	57.2	......

TABLE No. 7—Concluded.

CITIES.	Population.	Total Deaths Reported for Year 1912.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria and Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Lobar and Broncho Pneumonia.	Diarrhea and Enteritis (Under 2 Years).	Cerebro-Spinal Fever.	Acute Anterior Poliomyelitis.	Influenza.	Puerperal Septicemia.	Cancer.	External Causes.	Smallpox.
Tell City	3,437	52	15.1	261.8	......	......	29.0	......	......	29.0	174.6	58.1	58.1	......	58.1	......	87.2	58.1	......
Attica	3,368	71	21.0	59.3	89.0	......	29.6	......	......	29.6	118.8	89.0	......	......	59.3	59.3	148.5	148.5	......
Rochester	3,364	53	15.7	89.0	29.7	......	......	......	......	......	148.6	59.4	......	......	......	......	29.7	59.4	......
Jasonville	3,295	62	29.0	151.7	60.6	60.6	30.3	30.3	......	121.4	242.8	424.8	60.6	......	60.6	......	60.6	......	......
Union City	3,257	51	15.6	30.7	61.4	30.7	30.7	......	......	......	153.5	......	......	......	......	30.7	153.5	92.1	......
Gas City	3,224	25	7.7	......	......	......	62.0	......	......	......	93.0	31.0	......	......	31.0	......	62.0	93.0	......
Dunkirk	3,031	38	12.5	65.9	65.9	......	65.9	......	......	65.9	98.9	......	......	......	......	......	32.9	165.0	......
North Vernon	2,924	31	10.6	102.6	34.2	......	......	68.3	......	......	34.2	......	......	......	......	......	136.8	136.8	......
Montpelier	2,786	28	10.0	107.7	107.7	......	......	......	......	......	......	35.8	......	......	......	......	71.7	71.7	......
Bicknell	2,749	42	15.2	145.5	......	......	......	......	......	145.5	109.1	145.5	......	36.3	36.3	36.3	36.3	145.5	......
Rockport	2,736	45	16.4	182.8	36.5	146.2	36.5	......	......	......	146.2	109.6	......	......	......	......	36.5	73.1	......
Angola	2,656	47	17.7	225.9	......	37.6	......	......	......	......	75.3	......	......	......	......	......	......	150.6	......
Crown Point	2,545	40	15.7	78.5	......	......	......	......	......	39.2	235.8	......	......	39.2	......	......	39.2	117.9	......
Huntingburg	2,464	23	9.3	202.9	......	40.5	40.5	......	......	......	81.1	81.1	......	......	......	......	40.5	81.1	......
Rensselaer	2,406	34	14.1	124.7	124.7	......	......	......	......	......	41.5	......	......	......	......	......	166.3	166.3	......
Loogootee	2,231	44	19.7	358.5	89.6	89.6	......	44.8	......	......	89.6	89.6	......	......	......	......	89.6	......	......
Batesville	2,227	28	12.5	179.6	134.7	......	44.9	......	41.9	......	44.9	89.8	......	......	......	44.9	44.9	89.8	......
Monticello	2,174	35	16.1	230.0	91.9	......	......	......	......	......	45.9	45.9	......	......	......	......	45.9	91.9	......
Ligonier	2,173	33	15.1	......	......	......	......	......	......	46.0	46.0	......	......	......	......	......	184.1	92.0	......
Delphi	2,163	26	12.0	92.4	46.2	......	......	......	......	......	92.4	......	......	......	......	......	138.7	......	......
Cannelton	2,130	32	15.0	140.8	......	93.9	46.9	......	......	......	46.9	......	......	......	......	......	......	......	......
Covington	2,069	35	16.9	......	......	96.6	......	......	......	......	......	96.6	......	......	......	......	96.6	145.0	......
Butler City	1,818	24	13.2	275.0	......	......	......	......	......	......	165.0	......	......	......	......	......	110.0	110.0	......
Veedersburg	1,768	39	22.0	339.6	56.6	56.6	......	......	......	......	56.6	113 2	......	......	113.2	......	......	226.4	......
Rising Sun	1.513	40	26.4	198.3	......	......	......	......	......	......	198.3	......	......	......	66.1	......	198.3	264.4	......
Vevay	1,256	21	16.7	238.8	......	......	......	......	......	......	......	......	......	......	......	......	238.8	79.6	......

TABLE No. 8.

Annual Death Rates for Ten Years, 1903 to 1912, Inclusive, With Average of Cities of 5,000 (Estimated) Population and Over, Compared with Rural and State Rates.

LOCATION.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912 State Population, 2,730,506.	Rate For 1912.	Average.
Indianapolis	18.1	17.4	16.0	16.4	16.4	14.3	14.8	16.4	15.1	240,098	15.3	16.0
Evansville	14.7	14.9	14.4	15.1	13.8	14.4	15.0	13.4	15.5	70,711	13.4	14.4
Ft. Wayne	14.8	14.0	13.9	16.3	15.7	14.6	13.7	13.0	11.7	65,814	12.3	14.0
Terre Haute	18.3	23.1	21.0	22.5	17.6	17.2	18.0	16.2	15.7	60,305	14.5	18.4
South Bend	19.2	15.9	17.1	16.8	16.1	16.3	17.3	14.1	14.1	56,507	12.6	15.9
Muncie	18.1	17.8	16.0	14.8	15.7	15.9	15.1	15.3	13.0	24,311	12.7	15.4
Richmond	14.0	15.8	14.0	16.1	15.2	15.6	16.8	13.9	12.1	22,733	13.3	14.6
Anderson	14.6	15.5	12.1	13.3	13.1	11.2	14.5	14.6	13.5	22,706	13.0	13.4
Hammond	19.1	15.4	15.2	17.9	17.2	14.6	13.8	14.6	13.4	21,779	15.5	15.6
New Albany	16.6	18.1	18.1	16.1	17.6	15.8	14.2	18.2	15.4	20,629	14.7	16.4
Lafayette	18.4	21.5	21.6	18.6	16.0	17.7	19.4	16.6	16.9	20,277	19.4	18.1
Elkhart	14.3	15.4	13.6	14.0	14.2	13.4	14.2	13.9	10.8	19,691	11.3	13.5
East Chicago	9.3	12.4	14.5	18.5	32.2	26.5	29.0	15.3	15.7	19,666	16.7	19.0
Marion	17.5	16.6	14.0	13.6	11.5	9.6	11.0	12.5	13.2	19,561	14.1	13.3
Michigan City	18.6	14.7	14.1	14.3	15.4	12.1	11.5	14.7	13.2	19,444	13.0	14.1
Logansport	15.9	17.6	17.1	16.0	14.8	18.4	16.6	15.9	13.3	19,334	16.0	16.1
Gary	......	......	......	......	......	......	......	16.2	17.8	17,802	22.3	......
Kokomo	20.8	18.5	18.7	20.0	18.1	19.7	17.3	15.1	12.2	17,650	14.3	17.4
Vincennes	15.1	22.2	20.7	20.0	18.5	18.6	15.4	19.2	17.1	15,359	15.9	18.2
Mishawaka	17.0	19.2	24.3	21.4	21.9	30.0	13.5	11.6	13.2	12,518	10.3	18.2
Peru	12.1	13.3	11.2	13.8	13.5	12.0	15.4	13.3	13.6	11,154	12.6	13.0
Elwood	14.7	13.4	11.6	8.4	8.6	9.4	10.1	15.6	9.6	11,028	11.1	11.2
Laporte	17.3	18.2	17.5	20.7	19.8	15.0	15.9	17.8	16.2	10,866	20.8	17.9
Jeffersonville	21.7	20.3	17.3	19.7	20.2	13.1	15.0	19.2	17.6	10,412	15.9	18.0
Huntington	16.5	17.1	12.7	13.4	12.2	14.0	14.6	18.6	12.3	10,350	13.6	14.5
New Castle	......	......	......	......	......	......	......	14.9	13.6	10,050	11.4	......
Shelbyville	14.7	16.5	16.5	16.4	14.0	11.7	14.3	13.5	14.9	9,733	16.4	14.8
Crawfordsville	13.9	20.5	20.0	20.3	22.1	19.7	22.4	15.0	13.2	9,643	14.5	18.1
Brazil	8.0	20.0	12.5	12.8	16.9	13.3	13.0	11.6	15.8	9,495	14.4	13.8
Bloomington	14.8	16.9	18.9	19.7	14.7	14.9	17.2	18.6	15.8	9,075	15.9	16.7
Bedford	11.3	19.5	18.1	18.0	19.2	16.8	14.8	15.8	12.5	8,976	13.8	15.9
Columbus	15.8	18.5	14.8	17.1	15.1	17.7	14.8	17.2	13.7	8,881	14.0	15.8
Frankfort	17.0	15.1	20.0	18.7	17.6	17.2	14.8	10.4	12.1	8,787	13.6	15.6
Wabash	9.8	14.3	12.7	13.0	12.0	14.6	13.5	12.8	13.3	8,693	12.4	12.8
Goshen	11.1	12.5	14.0	18.1	16.3	15.3	13.0	13.2	13.2	8,584	12.4	13.9
Washington	15.5	15.9	14.2	16.5	11.5	13.2	11.0	12.8	14.1	7,854	13.2	13.7
Connersville	13.9	17.6	14.8	15.3	15.3	18.6	16.6	13.3	13.5	7,827	14.3	15.3
Valparaiso	13.9	15.6	11.5	12.4	11.2	13.3	12.3	12.7	11.1	7,057	9.2	12.3
Madison	18.1	17.7	15.0	18.4	19.8	19.7	19.0	20.9	17.5	6,934	16.4	18.2
Whiting	......	11.4	10.3	14.1	14.7	13.5	14.0	13.3	12.6	6,847	13.7	11.7
Clinton	......	......	......	......	......	......	......	13.8	13.6	6,560	20.1	......
Princeton	9.6	15.3	17.2	13.9	14.5	19.2	18.9	16.1	15.0	6,488	14.6	15.4
Seymour	13.0	16.1	15.8	15.6	16.6	21.6	20.0	11.7	14.4	6,305	17.9	17.2
Hartford City	11.0	13.0	12.0	8.8	11.9	9.8	11.2	15.2	16.4	6,262	10.8	12.0
Linton	9.7	12.5	11.8	11.7	10.4	10.6	11.2	14.3	12.5	6,189	11.1	11.5
Mt. Vernon	16.0	17.9	18.4	17.9	18.8	15.1	11.5	15.2	16.3	5,606	12.8	15.9
Lebanon	......	......	......	......	......	......	......	16.9	18.8	5,574	15.4	......
Greensburg	16.9	18.5	16.2	21.2	14.7	17.5	20.0	14.7	20.8	5,458	22.1	18.2
Portland	......	......	......	......	......	......	......	16.3	15.0	5,163	13.9	......
Kendallville	......	......	......	......	......	......	......	......	......	5,143	11.6	......
Noblesville	......	......	......	......	......	10.9	11.3	12.6	15.1	5,101	13.9	......
Alexandria	14.1	11.4	4.4	6.9	7.9	9.9	12.1	11.1	14.1	5,096	11.9	10.3
Bluffton	......	......	......	......	......	......	......	......	......	5,037	16.6	......
Urban	15.4	16.8	15.8	16.4	15.6	13.4	15.1	15.1	14.3	1,184,391	14.5	15.2
Rural	12.9	14.2	13.9	13.3	11.6	11.6	11.1	12.3	12.0	1,546,115	11.9	12.4
STATE	12.2	13.5	13.7	13.5	13.4	12.5	13.3	13.5	13.0	2,730,506	13.1	13.1

TABLE No. 9.

Showing Deaths by Occupations and Ages, for the Year Ending December 31, 1912.

OCCUPATIONS.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Actors and actresses	Males			1				1	2				
	Females			1						1			
Aeronauts and aviators	Males			1		1							
	Females												
Architects	Males												
	Females												
Artists and authors	Males			1		2							
	Females										1		
Athletes	Males				2				1			1	
	Females												
Bakers and confectioners	Males	5	3	2		2	2	2	5	2	5	2	4
	Females												
Bankers, brokers and officials of companies	Males	2	3	3		3	1	2	1	3	3	3	
	Females												
Barbers	Males	8	6	9	5	6	6	8	10	4	8	13	5
	Females												
Bartenders and saloonkeepers	Males	5	12	14	13	11	6	8	6	7	4	8	8
	Females												
Basket makers and broom makers	Males		1					1					
	Females												
Blacksmiths and horseshoers	Males	7	15	19	9	16	16	9	15	9	15	11	18
	Females												
Bookbinders	Males		1				1						
	Females												

Bookkeepers, clerks and copyists	Males	15	5	15	14	17	9	17	13	15	15	17	9
	Females	3	2	3	5	6	1	4	6	1	2	3	
Brewers, distillers, etc	Males	1			1	2		1		1		1	2
	Females												
Brickmakers	Males		1										
	Females												
Builders and contractors	Males	5	6	13	12	6	9	4	9	7	7	10	3
	Females												
Butchers	Males	2	2	3	4	9	4	3		5	2	4	5
	Females												
Cabinet makers	Males	4	8	2	6	2	4	5	9	4	7	7	1
	Females												
Carpenters	Males	38	37	39	37	44	32	30	42	34	41	34	38
	Females												
Carriage and wagon makers	Males	1	1	3	3	3	3		2	1	3	2	4
	Females												
Cashiers	Males	3	3				1		2		1	1	
	Females			1	1	1							
Chauffeurs	Males						1		1	1		1	
	Females												
Chemists and druggists	Males	2	3	4	6	2	2	1	1	2	1	2	3
	Females				1								
Chiropodists	Males									1			
	Females												
Cigar makers	Males		6	4	3			1		2	2	3	3
	Females	1											1
Cleaners and dyers	Males			1	1				2				
	Females				1								
Clergymen	Males	6	5	9	5	11	8	2	7	10	4	4	8
	Females	1	1				1	1				1	
Collectors, agents and auctioneers	Males	4	2	14		6	3	2		3	2	5	5
	Females		1										

TABLE No. 9—Continued.

Occupations.	Sex.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Commercial travelers	Males	6	3	5	1	7	10	3	5	2	6	1	3
	Females												
Compositors, printers and pressmen	Males	9	2	2	4	2	2	3	4	1	4	10	5
	Females												
Cooks and caterers	Males	3	3	2	2	5	4	2	4	1	1	1	2
	Females	2		5		1	2	1	1	1	3	3	2
Coopers	Males	5	4	2	3	3	1	3	2	2	4	3	3
	Females												
Dairymen	Males	1			1			1					1
	Females												
Dentists	Males	1	1	2	2	1	3	4	1		1	2	3
	Females												
Draftsmen	Males		2		1	1		1				1	
	Females												
Electricians	Males	3	3	6	2	6	2	6	8	6	6	5	5
	Females												
Electric railway employes	Males			4	2	1	1	1	1		1	1	
	Females												
Elevator operators	Males			1		1		1		1	1		
	Females												
Engineers and firemen (railway)	Males	10	1	1	6	7	4	3	6	10	5	9	4
	Females												
Engineers and firemen (stationary)	Males	4	6	15	14	7	4	5	8	5	6	6	7
	Females												
Engravers	Males												
	Females												
Factory employes	Males	9	11	8	14	15	5	6	8	3	3	20	8
	Females	1								2			1

Farmers and farm laborers	Males	470	442	504	447	376	334	383	389	370	399	388	458
	Females												
Firemen (city)	Males	1		1						1	1	1	
	Females												
Furriers	Males		1		2								
	Females												
Gardeners, florists and nurserymen	Males	2	5	8	5	4	8	8	1	4	3	1	1
	Females			1									
Glassworkers	Males	5	2	11	1	6		9	3	4	2	2	3
	Females												
Government employes	Males							2			1		
	Females												
Government officials	Males									1	2	1	
	Females												
Hairdressers, manicurists and masseurs	Males												
	Females	1						1	1				
Harness makers and saddlers	Males	5	3	3	1		1		2	3	3	1	4
	Females												
Hotel and boarding house keepers	Males	8	5	3	3	2		3	2			3	4
	Females		1		1				1				
Housework (general)	Males												
	Females	879	806	944	903	727	663	667	668	682	692	735	798
Hunters and fishermen	Males	1		1					1		1		1
	Females												
Inspectors	Males	2			1		1	1	3		3		4
	Females	1											
Janitors and janitresses	Males	4	4	4	7	2	1	3	1	3	4	2	2
	Females		1										
Journalists and publishers	Males	1	2	1	2		1			4			2
	Females												
Laborers	Males	194	190	179	198	165	159	136	148	118	131	165	179
	Females												
Launderers and laundresses	Males	1	2			1	1	1		2			2
	Females	3	1	2	2	1	2			1	1	1	

TABLE No. 9—Continued.

OCCUPATIONS.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Lawyers	Males	8	5	3	10	6	4	3	4	9	7	8	4
	Females												
Librarians	Males					1					1		
	Females												
Liverymen	Males	4		2	5	3	2	5	6	2		3	4
	Females												
Lumbermen	Males	1	1	2	3	2	3	3	3	2	3	1	2
	Females												
Machinists	Males	14	14	23	18	20	12	5	15	13	21	18	32
	Females												
Mail service	Males	2	5	4	2	2	1	5	2	2	2	2	5
	Females					1							
Managers and superintendents	Males	9	2	4	7	3	13	2	6	10	8	9	8
	Females			1					1				
Manufacturers	Males	4	5	2	6	3	5	5	4	4	5	8	3
	Females												
Marble and stone cutters	Males	3			1				1				1
	Females												
Masons	Males	8	5	11	14	11	8	7	12	12	8	9	9
	Females												
Mechanics	Males	11	8	9	6	2	2	8	9	7	4	3	7
	Females												
Merchants and dealers	Males	59	59	40	42	43	39	34	38	48	35	32	34
	Females		3							1	2		
Messengers and porters	Males	3	4	5	3		3	3	3	2	3	5	3
	Females												
Millers	Males	6	5	8	7	6	4	3	4	8	3	3	4
	Females												

Milliners and seamstresses	Males												
	Females	5	8	5	3	4	5	7	7	6	6	10	3
Miners and quarrymen	Males	21	23	30	20	14	18	15	16	18	23	23	26
	Females												
Molders, iron and steel workers	Males	4	6	8	9	10	6	8	6	5	4	12	5
	Females												
Musicians	Males	4	1	3	1	1	1		1	1	1	1	2
	Females	1	1	1	2	1	1		1		2	1	
Nuns	Males												
	Females		1			1					2		
Nurses	Males					1	2		3		3	1	1
	Females	2	4	4	2		2			1	1	2	2
Oculists and opticians	Males								1				
	Females												
Oil workers	Males	1		3	1	1	2	1	1			3	2
	Females												
Osteopaths	Males												
	Females												
Packers	Males	2	1	1			1	2	1	1	1		2
	Females												
Painters, glaziers and varnishers	Males	16	17	18	14	20	14	12	14	13	12	10	19
	Females												
Paper hangers, decorators and window dressers	Males	1		3			5		1	1	2		2
	Females												
Peddlers	Males	1	4	3	1		1	1				2	2
	Females												
Photographers	Males	1			2	3				2	2		3
	Females												
Physicians and surgeons	Males	14	9	14	9	4	9	8	7	11	11	11	9
	Females												
Plasterers and lathers	Males	7	2	7	3	3	2	4	2	2	3	2	2
	Females												

TABLE No. 9—Continued.

OCCUPATIONS.	SEX.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Plumbers	Males	3	1	2	5	4	3		2	3		3	2
	Females												
Policemen, detectives and watchmen	Males	6	8	6	2	8	5	4	2	2	2	4	1
	Females												
Potters	Males					1	1					1	
	Females												
Professors and teachers	Males	3	3	5	2	6	5	2	4	4	3	4	5
	Females	12	10	5	4	4	8	3	7	2	4	6	4
Public officials	Males	2	1	1	2	3	1	3	6	4	3	5	5
	Females												
Sailors	Males	2	1	6		2	2	1		2	1	1	1
	Females												
Salesmen and saleswomen	Males	14	26	22	16	14	14	8	7	8	13	7	24
	Females	3	3		3		2	2				1	1
Scientists	Males									1			
	Females												
Servants, caretakers and attendants	Males	5	5	3	2	1		3		2	2	2	
	Females	14	12	3	7	4	3	1	1	4		1	5
Shoemakers	Males	13	9	10	10	5	3	10	5	6	5	5	4
	Females												
Steam railway employes	Males	24	35	25	17	26	18	25	28	14	26	26	24
	Females												
Stenographers and secretaries	Males	1		1	1	1	2	1		1		1	1
	Females			1					1		1	1	
Stock dealers	Males	2		2	3	3	2	2	2	3	3	7	4
	Females												
Students	Males	9	8	12	5	6	3	7	12	7	8	10	5
	Females	6	2	4	7	10	6	8	5	5	2	6	7

Surveyors and civil engineers	Males	2	1	1	1				1	1	1		2
	Females												
Tailors	Males	4	4	6	5	4	6	1	7	4	10	4	5
	Females	1	1				2	1			1		
Tanners and curriers	Males	1				1							
	Females												
Teamsters and drivers	Males	15	10	14	8	14	7	12	15	15	14	11	15
	Females												
Telegraph and telephone operators	Males	5	1	3	2	4	1	4	2	4	2	2	2
	Females				2			2	1				1
Tinners	Males	4	2	4	2	1	1		1	2	4	2	2
	Females												
Undertakers	Males		2	1	1	1	4					1	
	Females												
Upholsterers	Males		3		3	1		1			1		
	Females												1
Veterinary surgeons	Males		2		4	1			1		1	2	1
	Females												
Volunteer soilders and pensioners	Males	3	6	9	7	4	8	3	4	3	5	1	1
	Females												
Watchmakers, jewelers and lapidaries	Males				1		1	1			1		3
	Females												
Weavers	Males		1	1	1	1			1		1	2	
	Females	1						1	1				
No occupation reported	Males	163	166	193	162	172	129	126	116	157	143	165	160
	Females	286	270	297	280	264	202	186	215	231	226	215	284
Totals	Males	1,338	1,283	1,450	1,286	1,198	1,023	1,030	1,101	1,068	1,114	1,184	1,275
	Females	1,223	1,128	1,278	1,224	1,025	900	875	917	938	956	986	1,110
Total, 15 years and over													
Under 15 years													
Grand total													

TABLE No. 9—Continued.

Showing Deaths by Occupations and Ages, for the Year Ending December 31, 1912.

OCCUPATIONS.	SEX.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.	70 to 74.	75 to 79.	80 to 90.	90 and Over.	Unknown	Totals.	
																		Males.	Females.
Actors and actresses	Males		1			1	1				1							4	
	Females	1						1											2
Aeronauts and aviators	Males	1										1						2	
	Females																		
Architects	Males																		
	Females																		
Artists and authors	Males							1					2					3	
	Females		1																1
Athletes	Males		2				1							1				4	
	Females																		
Bakers and confectioners	Males	1	5	3	1	2	2	3	8	4	1	1	2		1			34	
	Females																		
Bankers, brokers and officials of companies	Males						1	1	3	2	3	5	4	2	3			24	
	Females																		
Barbers	Males		6	8	6	6	13	14	13	4	6	4	5	2	1			88	
	Females																		
Bartenders and saloonkeepers	Males	1	3	8	15	15	17	12	10	7	4	5	4		1			102	
	Females																		
Basket makers and broom makers	Males						1							1				2	
	Females																		
Blacksmiths and horseshoers	Males		1	2	2	2	4	7	18	12	23	15	18	17	33	5		159	
	Females																		
Bookbinders	Males								1						1			2	
	Females																		

Bookkeepers, clerks and copyists	Males	10	19	24	12	12	12	11	12	10	12	11	4	7	5			161	
	Females	7	8	8	4	4	2	2				1							36
Brewers, distillers, etc	Males	1					2	1		3			1	1				9	
	Females																		
Brickmakers	Males								1									1	
	Females																		
Builders and contractors	Males		1	3	3	4	7	10	11	10	10	5	10	10	6	1		91	
	Females																		
Butchers	Males		4	1	1	4	5	1	5	4	6	4	5	2	1			43	
	Females																		
Cabinet makers	Males	1		3	3	1	6	2		3	6	4	15	6	7	2		59	
	Females																		
Carpenters	Males	2	3	4	10	16	19	30	35	43	59	72	54	60	39			446	
	Females																		
Carriage and wagon makers	Males						2			3	4	5	3	2	6	1		26	
	Females																		
Cashiers	Males	1		1	2	1		2		1	2		1					11	
	Females		2	1															3
Chauffeurs	Males			1	2	1												4	
	Females																		
Chemists and druggists	Males	1	1	1	5	4	2	1	5	2	4	1		1	1			29	
	Females								1										1
Chiropodists	Males											1						1	
	Females																		
Cigar makers	Males			1	2	2	2	2	4	2	2	2	2	1	2			24	
	Females		1			1													2
Cleaners and dyers	Males			1	1							1			1			4	
	Females	1																	1
Clergymen	Males				1	1	1	4	8	3	9	8	14	14	10	6		79	
	Females		1							1	2				1				5
Collectors, agents and auctioneers	Males		1	1	4	1	5	4	2	3	9	7	5	4				46	
	Females														1				1

TABLE No. 9—Continued.

Occupations.	Sex.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.	70 to 74.	75 to 79.	80 to 90.	90 and Over.	Un-known	Totals.	
																		Males.	Females.
Commercial travelers	Males		2	3	2	5	7	7	7	4	3	6	3	2	1			52	
	Females																		
Compositors, printers and pressmen	Males	3	3	6	7	3	1	3	6	3	2	1	7	2	1			48	
	Females																		
Cooks and caterers	Males		5	4	1	6	3	2	3	2	2	2						30	
	Females	1	6	2	4	2			2		1	2		1					21
Coopers	Males		1			1	5	3		3	5	1	6	2	5	3		35	
	Females																		
Dairymen	Males		1			1				1					1			4	
	Females																		
Dentists	Males		1	1	2	3	1		2	2	2	3	4					21	
	Females																		
Draftsmen	Males	1	1				2					1			1			6	
	Females																		
Electricians	Males	2	13	13	8	4	6	2	4	2	1		2		1			58	
	Females																		
Electric railway employes	Males	1	1	1	1	3	1		1	1	1		1					12	
	Females																		
Elevator operators	Males	1	2								1	1						5	
	Females																		
Engineers and firemen (railway)	Males		3	6	7	7	2	4	7	6	11	8	4	1				66	
	Females																		
Engineers and firemen (stationary)	Males		9			9	6	6	9	9	17	6	8	3	5			87	
	Females																		
Engravers	Males																		
	Females																		

Factory employes	Males	12	8	9	10	8	6	11	11	5	9	11	4	6				110	
	Females	2	1	1															4
Farmers and farm laborers	Males	84	139	118	139	117	173	200	258	360	479	566	677	740	790	117	3	4,960	
	Females																		
Firemen (city)	Males				1	1	2				1							5	
	Females																		
Furriers	Males									1			1	1				3	
	Females																		
Gardeners, florists and nurserymen	Males		1	1	2	3		5	2	4	5	4	10	4	8	1		50	
	Females								1										1
Glassworkers	Males	3	9	4	5	7	6	2		2	1	3	3	2	1			48	
	Females																		
Government employes	Males					1		1					1					3	
	Females																		
Government officials	Males		1					1		2								4	
	Females																		
Hairdressers, manicurists and masseurs	Males																		
	Females			2						1									3
Harness makers and saddlers	Males	1	1				1	2		3	5	5		3	5			26	
	Females																		
Hotel and boarding house keepers	Males			1	1	4	4	3	5	1	5	1	1	2	3	2		33	
	Females						2				1								3
Housework (general)	Males																		
	Females	159	436	589	630	515	522	541	626	722	795	918	879	842	883	106	1		9,164
Hunters and fishermen	Males										1	1	2		1			5	
	Females																		
Inspectors	Males			1	2	3		2	4		2	1						15	
	Females			1															1
Janitors and janitresses	Males				1	3	2	4	9	6	1	5	4	1	1			37	
	Females									1									1
Journalists and publishers	Males		2	1	1	1			1		2	2			3			13	
	Females																		

TABLE No. 9—Continued.

OCCUPATIONS.	SEX.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.	70 to 74.	75 to 79.	80 to 90.	90 and Over.	Un-known	Totals.	
																		Males.	Females.
Laborers	Males	76	168	165	128	135	142	146	178	164	171	159	134	98	91	7		1,962	
	Females																		
Launderers and laundresses	Males		1		2	1	1		1	1	1	1	1					10	
	Females		3	1				1	4	2	2		1						14
Lawyers	Males			3	1		4	3	7	8	4	11	11	8	11			71	
	Females																		
Librarians	Males						1					1						2	
	Females																		
Liverymen	Males	1	1	2	3	5	2	1	1	5	4	5	2	2	2			36	
	Females																		
Lumbermen	Males		1			1	1	3	1	2	1	5	4	5	1	1		26	
	Females																		
Machinists	Males	14	21	18	20	20	10	9	28	13	19	11	12	4	6			205	
	Females																		
Mail service	Males				3	4	2	2	3	6	3	7	4					34	
	Females							1											1
Managers and superintendents	Males	1	2	4	4	5	12	9	8	12	10	4	5	3	2			81	
	Females		1			1													2
Manufacturers	Males				2			6	10	9	5	7	5	8	2			54	
	Females																		
Marble and stone cutters	Males			1				2	1	1		1						6	
	Females																		
Masons	Males	3	4	7	3	5	7	8	14	12	8	13	9	11	9	1		114	
	Females																		
Mechanics	Males	2	5	5	9	3	4	7	3	8	7	5	9	4	5			76	
	Females																		

Merchants and dealers	Males	3	7	11	13	17	29	25	36	66	69	73	47	52	48	7		503	
	Females			1				2						2	1				6
Messengers and porters	Males	3	4	2	4	2	6	5	4	2	2	2			1			37	
	Females																		
Millers	Males	2	1	1	2		1	5	6	5	7	6	7	12	6			61	
	Females																		
Milliners and seamstresses	Males																		
	Females	1	5	6	7	7	6	8	8	3	2	7	5	2	2				69
Miners and quarrymen	Males	10	21	25	21	24	16	20	24	22	17	20	10	10	6	1		247	
	Females																		
Molders, iron and steel workers	Males	1	5	9	7	7	9	6	11	5	7	5	6	2	3			83	
	Females																		
Musicians	Males	1	2	2	3		3		2	1	2		1					17	
	Females	1	1			3	2		2		1				1				11
Nuns	Males																		
	Females										3				1				4
Nurses	Males		1	5			1	1			2				1			11	
	Females		1	4	3	2	1		1	2	2	3		1					20
Oculists and opticians	Males											1						1	
	Females																		
Oil workers	Males		2	1	1	1	2	1	2			2	1	1	1			15	
	Females																		
Osteopaths	Males																		
	Females																		
Packers	Males		2			2	1		1		4	1	1					12	
	Females																		
Painters, glaziers and varnishers	Males	1	7	9	10	9	15	18	21	20	18	15	16	14	6			179	
	Females																		
Paper hangers, decorators, and window dressers	Males		1	2	1	2	1	1	1		2	1		2	1			15	
	Females																		
Peddlers	Males						3	1		6	1		1	1	2			15	
	Females																		

TABLE No. 9—Continued.

Occupations.	Sex.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.	70 to 74.	75 to 79.	80 to 90.	90 and Over.	Unknown	Totals.	
																		Males.	Females.
Photographers	Males	......	......	2	......	1	1	1	1	1	2	1	2	......	1	......	......	13	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Physicians and surgeons	Males	......	1	......	6	4	5	6	11	11	12	18	18	9	14	1	......	116	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Plasterers and lathers	Males	......	1	1	1	1	3	3	1	3	6	4	4	6	4	1	......	39	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Plumbers	Males	1	3	2	2	4	2	3	2	......	5	2	1	1	......	......	......	28	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Policemen, detectives and watchmen	Males	......	......	2	1	7	3	3	4	6	6	5	8	4	1	......	......	50	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Potters	Males	1	......	......	1	......	1	......	......	......	......	......	......	......	......	......	......	3	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Professors and teachers	Males	2	2	5	6	2	5	2	2	4	5	3	3	3	2	......	......	46	....
	Females	3	9	11	7	5	2	6	9	5	3	5	1	1	2	......	......	......	69
Public officials	Males	......	......	1	1	2	1	4	8	3	3	7	4	2	......	......	......	36	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Sailors	Males	......	2	2	2	2	1	1	1	1	1	1	1	......	4	......	......	19	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Salesmen and saleswomen	Males	10	11	10	11	22	15	15	16	21	18	11	9	1	3	......	......	173	....
	Females	4	3	3	......	......	1	1	1	1	1	......	......	......	......	......	......	......	15
Scientists	Males	......	......	......	......	......	......	......	......	......	1	......	......	......	......	......	......	1	....
	Females	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Servants, caretakers and attendants	Males	2	3	3	3	2	2	1	2	1	2	2	2	......	......	......	......	25	....
	Females	4	5	8	6	3	3	3	2	4	8	1	4	3	1	......	......	......	55

Shoemakers	Males		1	1	4	4	1	2	5	6	7	11	17	14	12			85	
	Females																		
Steam railway employes	Males	5	30	24	30	29	19	16	32	20	20	20	20	13	9	1		288	
	Females																		
Stenographers and secretaries	Males	2	1	1	2	2	1		1									10	
	Females		1		1			2											4
Stock dealers	Males			1	1	1	2	1	6	4	5	3	5	2	2			33	
	Females																		
Students	Males	55	23	5	2		1			1								87	
	Females	58	7	1		1	1												68
Surveyors and civil engineers	Males		1	3		1	1	2			1	1						10	
	Females																		
Tailors	Males	3	1	5	7	1	5	6	5	6	2	4	4	4	6	1		60	
	Females	1						2		1					1	1			6
Tanners and curriers	Males						1						1					2	
	Females																		
Teamsters and drivers	Males	3	7	8	4	16	11	16	22	15	13	17	5	7	6			150	
	Females																		
Telegraph and telephone operators	Males		6	3	5	3	4	4	2	1	3		1					32	
	Females	1	3						2										6
Tinners	Males	2			2	2	3			3	5	3		3	2			25	
	Females																		
Undertakers	Males					3			1	3	1				2			10	
	Females																		
Upholsterers	Males		1	1	1			2		2		1			1			9	
	Females					1													1
Veterinary surgeons	Males				1			1	1	1	1	3	2		2			12	
	Females																		
Volunteer soldiers and pensioners	Males		7	3	1						2	10	13	13	4	1		54	
	Females																		
Watchmakers, jewelers and lapidaries	Males			1		1			1		1		2	1				7	
	Females																		

TABLE No. 9—Concluded.

OCCUPATIONS.	SEX.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 64.	65 to 69.	70 to 74.	75 to 79.	80 to 90.	90 and Over.	Unknown	Totals.	
																		Males.	Females.
Weavers	Males		1			1					1	2	1	1	1			8	
	Females		1												2				3
No occupation reported	Males	105	65	59	56	70	67	58	74	101	123	202	232	267	316	53	4	1,852	
	Females	177	136	88	66	55	52	56	108	130	189	253	350	480	657	159			2,956
Totals	Males	436	673	646	646	686	759	792	1,026	1,115	1,328	1,467	1,528	1,487	1,541	213	7	14,350	
	Females	421	632	727	728	600	594	626	767	873	1,010	1,190	1,244	1,332	1,553	259	4		12,560
Total, 15 years and over																		26,910	
Under 15 years																		8,861	
Grand total																		35,771	

TABLE No. 10.

Deaths from Tuberculosis, all Forms, with Rates per 100,000 Population, for Certain Occupations of each Sex, for Year 1912.

OCCUPATIONS.	Number of Deaths, 15 Years of Age and Over.	Death Rate per 100,000.
MALES.		
Farmers and farm laborers	436	15 9
Laborers	335	12.2
No occupation reported	199	8.6
Merchants and dealers	42	1.5
Salesmen	39	1.4
Carpenters	38	1.3
Machinists	33	1 2
Steam railway employes	31	1.1
Students	23	.8
Barbers	22	.8
Bookkeepers, clerks and copyists	22	.8
Miners and quarrymen	21	.7
Bartenders and saloonkeepers	20	.7
Painters, glaziers and varnishers	19	.6
Teamsters and drivers	18	.6
Factory employes	17	.6
Molders, iron and steel workers	17	.6
Electricians	15	.5
Mechanics	15	.5
Glassworkers	14	.5
Messengers and porters	12	.4
Builders and contractors	11	.4
Masons	11	.4
Millers	11	.4
Tailors	11	.4
Blacksmiths and horseshoers	10	.3
Cooks and caterers	10	.3
Compositors, printers and pressmen	9	.3
Servants, caretakers and attendants	9	.3
Engineers and firemen (stationary)	8	.2
Telegraph and telephone operators	8	.2
Volunteer soldiers and pensioners	8	.2
Chemists and druggists	7	.2
Harness makers and saddlers	7	.2
Physicians and surgeons	7	.2
Clergymen	6	.2
Engineers and firemen (railway)	6	.2
Liverymen	6	.2
Mail service	6	.2
Musicians	6	.2
Professors and teachers	6	.2
Shoemakers	6	.2
Butchers	5	.1
Cabinet makers	5	.1
Cigar makers	5	.1
Collectors, agents and auctioneers	5	.1
Coopers	5	.1
Managers and superintendents	5	1
Paper hangers, decorators and window dressers	5	.1
Plumbers	5	.1
Bakers and confectioners	4	.1
Commercial travelers	4	.1
Dentists	4	.1
Lawyers	4	.1
Peddlers	4	.1

TABLE No. 10—Continued.

Occupations.	Number of Deaths, 15 Years of Age and Over.	Death Rate per 100,000.
Stenographers and secretaries	4	.1
Tinners	4	.1
Janitors	3	.1
Marble and stone cutters	3	.1
Packers	3	.1
Plasterers and lathers	3	.1
Architects	2	.07
Athletes	2	.07
Draftsmen	2	.07
Elevator operators	2	.07
Firemen (city)	2	.07
Inspectors	2	.07
Launderers	2	.07
Policemen, detectives and watchmen	2	.07
Public officials	2	.07
Sailors	2	.07
Watchmakers, jewelers and lapidaries	2	.07
Actors	1	.03
Brewers, distillers, etc	1	.03
Carriage and wagon makers	1	.03
Cashiers	1	.03
Chauffeurs	1	.03
Cleaners and dyers	1	.03
Gardeners, florists and nurserymen	1	.03
Hotel and boarding house keepers	1	.03
Nurses	1	.03
Oculists and opticians	1	.03
Oil workers	1	.03
Photographers	1	.03
Surveyors and civil engineers	1	.03
Undertakers	1	.03
Upholsterers	1	.03
Veterinary surgeons	1	.03
FEMALES.		
Housework (general)	1,373	50.2
No occupation reported	346	12.6
Students	32	1.1
Professors and teachers	21	.7
Milliners and seamstresses	15	.5
Servants, caretakers and attendants	14	.5
Bookkeepers, clerks and copyists	13	.4
Saleswomen	7	.2
Nurses	6	.2
Cooks and caterers	5	.1
Factory employes	5	.1
Musicians	3	.1
Telegraph and telephone operators	3	.1
Merchants and dealers	2	.07
Cashiers	1	.03
Cigar makers	1	.03
Hair dressers, manicurists and masseurs	1	.03
Librarians	1	.03
Scientists	1	.03
Stenographers and secretaries	1	.03
Tailoress	1	.03

TABLE No. 11.

Poliomyelitis by Months, Ages and Counties, for the Year Ending December 31, 1912.

MONTHS.

January	4	July	3
February	....	August	9
March	3	September	9
April	1	October	6
May	1	November	4
June	1	December	6

AGES.

Under one year	12	Twenty to twenty-five years	2
One to two years	5	Twenty-five to thirty years	....
Two to five years	11	Thirty to thirty-five years	....
Five to nine years	7	Thirty-five to forty years	1
Ten to fourteen years	5	Forty to forty-five years	....
Fifteen to twenty years	3	Forty-five years and over	1

COUNTIES.

Allen	1	Lake	2
Bartholomew	1	Laporte	3
Benton	1	Madison	2
Blackford	1	Marion	5
Cass	1	Marshall	1
Clay	1	Newton	1
Clinton	1	Noble	1
Elkhart	2	Posey	1
Franklin	1	Ripley	1
Grant	1	Spencer	1
Greene	1	Tippecanoe	1
Hamilton	2	Union	2
Hendricks	3	Vigo	1
Jay	1	Wabash	2
Knox	1	Warrick	2
Lagrange	1	Wayne	1

Total males	20
Total females	27
Total	47

TABLE A.

Births by Months, Color, Nationality of Parents, for the Year Ending December 31, 1912. (Stillbirths excluded.)

Counties.	1912												Sex.			Color.				Nationality of Parents.					
																White.		Colored.		American.		Foreign.		Not Reported.	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total No. Children.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Adams	48	48	48	33	53	33	50	52	57	47	31	31	278	258	536	278	258	....	....	506	510	25	21	....	....
Allen	158	156	152	137	138	160	192	182	168	140	136	157	927	967	1,894	923	964	4	3	1,676	1,714	186	159	14	3
Bartholomew	41	45	40	41	41	34	45	57	33	44	36	43	277	234	511	276	233	1	1	491	492	9	8	....	....
Benton	19	15	11	27	19	15	16	26	16	19	23	25	127	106	233	124	105	3	1	228	230	3	1	....	....
Blackford	29	38	32	26	34	19	32	31	34	32	25	38	183	192	375	183	191	....	1	364	368	3	1	3	1
Boone	42	33	43	41	29	33	41	46	39	37	35	28	223	228	451	223	228	....	....	445	446	1	1	1	....
Brown	14	12	12	12	16	18	13	17	18	12	16	15	90	86	176	90	86	....	....	173	174	1	1	1	....
Carroll	26	32	34	23	23	37	26	29	43	20	27	18	174	167	341	174	167	....	....	335	336	2	1	1	1
Cass	66	72	77	50	55	55	77	73	48	66	59	77	425	361	786	422	360	3	1	739	741	36	33	....	1
Clark	61	54	45	37	47	55	41	60	40	60	58	46	312	297	609	300	289	12	8	599	602	4	1	1	1
Clay	64	57	57	62	46	57	51	69	55	54	47	53	365	311	676	365	309	....	2	643	649	25	23	4	....
Clinton	35	42	40	46	44	48	44	37	42	42	40	45	271	242	513	271	240	....	2	500	503	4	2	1	....
Crawford	24	21	16	14	19	22	28	33	14	17	23	26	132	128	260	132	128	....	....	257	257	....	....	....	....
Daviess	55	78	69	49	51	66	55	68	67	75	42	78	407	354	761	406	352	1	2	745	751	4	2	4	....
Dearborn	45	46	33	33	27	24	39	37	37	32	25	25	207	203	410	204	203	3	....	394	398	5	3	4	2
Decatur	34	32	21	28	43	27	28	34	29	25	26	31	178	183	361	178	183	....	....	354	354	3	3	1	1
Dekalb	40	34	33	35	35	35	32	40	41	34	36	35	211	224	435	211	224	....	....	402	408	26	22	2	....
Delaware	102	97	94	78	65	107	97	103	85	98	70	78	600	482	1,082	573	471	27	11	1,047	1,057	17	17	10	....
Dubois	34	51	44	38	43	49	42	36	41	41	41	45	265	244	509	265	244	....	....	497	503	5	1	3	1
Elkhart	84	95	92	77	89	87	89	94	87	76	68	82	524	507	1,031	520	504	4	3	958	968	58	52	4	....

Fayette	26	21	31	20	25	21	22	15	19	33	17	18	155	113	268	152	109	3	4	263	265	3	3	2	....
Floyd	49	48	61	53	30	36	45	48	52	34	40	35	253	279	532	241	276	12	3	520	526	10	5	1	....
Fountain	36	27	31	39	35	36	42	31	35	23	28	38	209	194	403	209	194	....	...	394	398	6	3	1	....
Franklin	18	24	21	13	21	37	20	34	29	27	31	18	140	146	286	140	146	....	...	278	281	4	2	1	....
Fulton	28	29	26	24	30	16	29	35	27	24	26	36	175	159	334	175	159	....	....	328	330	1	....	1	....
Gibson	61	65	68	39	53	57	52	52	51	82	72	53	374	339	713	364	328	10	11	699	705	1	....	5	....
Grant	100	78	72	71	75	73	85	96	91	82	79	86	539	458	997	530	455	9	3	893	976	15	12	5	....
Greene	82	87	75	71	73	70	74	79	81	90	60	55	487	418	905	487	417	....	1	829	844	64	53	4	....
Hamilton	48	48	55	38	35	44	48	43	56	47	32	34	266	265	531	265	265	1	....	522	526	3	1	3	1
Hancock	26	32	25	29	27	22	29	30	27	25	16	26	176	140	316	175	138	1	2	308	308	4	4	2	2
Harrison	46	38	34	25	32	25	33	43	43	38	31	35	236	193	429	236	192	....	1	418	421	4	1	1	1
Hendricks	37	30	36	38	43	33	29	40	27	35	26	27	202	202	404	202	201	....	1	396	400	1	1	4	....
Henry	69	60	60	47	60	58	55	70	60	56	46	42	363	328	691	360	325	3	3	665	668	11	14	7	1
Howard	55	61	73	45	66	59	49	66	63	44	57	43	336	352	688	332	351	4	1	653	661	26	19	2	1
Huntington	50	60	55	44	53	55	67	57	70	66	59	52	358	337	695	358	336	....	1	673	685	7	3	8	....
Jackson	45	43	51	52	53	45	45	57	46	58	36	35	292	283	575	291	283	1	....	558	558	7	8	1	....
Jasper	24	23	23	16	28	19	28	32	24	27	22	29	159	138	297	150	138	....	....	276	287	17	8	2	....
Jay	54	32	55	52	58	39	43	56	42	45	35	34	280	273	553	278	272	2	1	538	542	2	3	5	....
Jefferson	38	27	26	33	36	28	38	45	25	30	29	21	194	183	377	194	178	....	5	371	375	4	1	1	....
Jennings	19	29	18	22	27	17	20	27	31	17	16	23	118	149	267	116	146	2	3	260	265	2	1	4	....
Johnson	30	42	40	37	43	29	47	33	34	36	31	23	222	205	427	218	202	4	3	421	424	2	1	2	....
Knox	99	79	77	77	76	74	72	94	01	91	68	76	521	461	982	517	460	4	1	932	984	35	20	7	....
Kosciusko	50	40	67	47	55	54	62	38	36	49	43	33	296	283	579	296	283	....	....	563	566	6	8	5	....
Lagrange	25	30	27	30	29	25	27	25	30	44	30	37	181	182	363	181	182	....	....	349	356	8	4	2	....
Lake	186	157	143	147	168	190	190	203	174	197	197	183	1,099	1,062	2,161	1,098	1,060	1	2	1,022	1,121	1,105	1,014	8	....
Laporte	88	76	107	83	81	84	93	84	84	83	100	75	538	510	1,048	538	510	....	....	801	836	232	202	5	....
Lawrence	66	66	56	62	75	69	82	92	75	80	67	79	432	443	875	431	441	1	2	845	849	22	20	2	....
Madison	128	114	134	98	114	112	149	128	108	95	114	129	710	723	1,433	701	713	9	10	1,364	1,388	50	34	9	1
Marion	415	470	466	401	465	440	472	444	463	494	419	465	2,742	2,720	5,462	2,523	2,460	219	260	4,837	4,988	469	421	108	5
Marshall	32	43	46	40	45	50	43	40	30	58	46	34	269	243	512	269	242	....	1	500	501	6	6	1	....
Martin	26	27	37	25	20	17	23	27	29	28	13	26	147	153	300	147	153	....	....	297	298	....	....	1	....
Miami	43	64	50	38	47	40	64	58	56	54	55	46	315	302	617	312	302	3	....	594	603	17	12	4	....
Monroe	51	51	49	50	52	51	56	66	56	44	46	51	302	327	629	296	325	6	2	607	616	9	7	7	....
Montgomery	67	54	61	45	42	51	53	62	45	34	60	50	316	317	633	314	312	2	5	620	623	3	1	1	....
Morgan	37	40	28	31	29	37	38	46	29	31	28	37	203	210	413	202	210	1	....	408	411	1	....	2	....
Newton	16	18	20	11	15	14	25	16	14	23	12	17	97	107	204	97	107	....	....	194	194	7	7	....	....
Noble	28	36	32	43	26	33	35	42	25	41	25	37	207	200	407	207	200	....	....	393	398	9	5	1	....
Ohio	4	2	7	5	3	5	7	7	7	7	7	7	35	33	68	34	32	1	1	66	68	1	....	1	....
Orange	35	37	37	36	33	29	41	45	44	30	31	35	233	208	441	232	208	1	....	429	432	4	1	....	....
Owen	19	22	22	26	32	17	23	26	25	27	25	11	147	131	278	146	130	1	1	271	274	....	....	4	1

TABLE A—Concluded.

COUNTIES.	1912.												SEX.			COLOR.				NATIONALITY OF PARENTS.					
																White.		Colored.		American.		Foreign.		Not Reported.	
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total No. Children.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Parke	32	35	56	24	46	26	41	33	37	25	22	29	208	204	412	208	204	....	....	382	387	22	18	2	1
Perry	35	39	42	31	37	22	33	59	35	30	23	27	214	205	419	214	204	....	1	407	400	4	3	2	1
Pike	34	36	40	30	34	27	36	43	58	38	47	35	251	211	462	251	210	....	1	454	456	2	2	2	....
Porter	33	35	27	31	38	28	38	25	31	38	27	23	182	200	382	182	200	....	....	339	343	32	29	3	2
Posey	48	36	32	44	36	37	46	43	44	37	38	30	227	249	476	223	246	4	3	468	469	1	2	2	....
Pulaski	19	14	21	20	18	19	17	10	24	14	11	19	109	99	208	109	99	....	....	197	200	6	5	3	1
Putnam	31	33	48	29	30	35	31	36	30	35	31	24	206	192	398	205	192	1	....	391	393	1	....	1	....
Randolph	50	48	47	43	40	42	60	52	52	47	40	48	321	252	573	319	251	2	1	564	565	1	1	4	3
Ripley	37	29	31	35	31	31	32	20	41	29	25	23	194	174	368	194	174	....	....	361	358	2	6	1	....
Rush	49	29	46	37	32	20	29	37	25	30	28	21	208	177	385	204	172	4	5	371	381	4	2	8	....
Scott	18	14	13	10	22	15	24	20	12	16	13	16	92	104	196	92	104	....	....	193	193	....	....	....	....
Shelby	51	49	45	45	50	49	40	50	59	50	41	30	281	285	566	275	279	6	6	551	556	6	2	2	1
Spencer	43	45	25	38	27	26	39	45	47	43	39	22	224	220	444	223	218	1	2	428	436	8	3	3	....
Starke	18	12	23	19	18	18	17	23	27	20	14	25	124	115	239	124	115	....	....	198	213	35	21	1	....
Steuben	17	18	17	27	13	22	16	17	26	12	25	19	111	118	229	110	118	1	....	225	226	3	2	1	1
St. Joseph	212	176	215	185	208	173	234	228	185	197	170	169	1,212	1,160	2,372	1,212	1,157	....	3	1.311	1,414	1,032	936	9	2
Sullivan	84	87	72	62	70	76	81	88	77	80	78	84	507	439	946	507	439	....	....	856	869	79	69	4	1
Switzerland	12	21	19	10	10	17	14	14	24	14	14	17	94	93	187	94	93	....	....	184	186	....	....	2	....
Tippecanoe	53	52	63	65	65	69	81	67	45	56	53	70	417	333	750	416	330	1	3	690	708	46	30	3	1
Tipton	30	46	39	34	33	40	35	41	35	29	30	29	224	212	436	224	212	....	....	427	428	1	....	2	2
Union	9	5	5	14	12	6	9	8	8	18	8	8	48	62	110	47	62	1	....	109	110	....	....	1	....
Vanderburgh	130	117	132	109	134	126	142	163	125	131	119	127	832	740	1,572	800	691	32	49	1,480	1.517	51	36	24	2
Vermillion	41	37	41	26	34	24	38	39	48	29	46	38	204	239	443	201	235	3	4	342	349	96	92	3	....
Vigo	146	114	164	117	140	144	122	140	117	106	141	137	838	766	1,604	809	750	29	16	1,449	1,494	117	92	22	2

Wabash	40	45	49	40	55	52	53	39	59	42	48	31	296	260	556	294	259	2	1	542	549	9	3	2	1
Warren	16	19	15	20	19	15	30	20	17	21	20	16	113	118	231	113	118	....	....	226	228	2	.....	.....	.....
Warrick	44	34	34	45	34	31	35	32	40	29	33	31	235	193	428	235	190	....	3	420	419	2	3	.....	.....
Washington	29	34	28	31	27	39	31	26	39	33	32	25	188	191	379	188	191	....	....	373	374	.....	.....	1	.....
Wayne	76	71	68	77	70	75	94	71	70	80	59	75	452	441	893	438	422	14	19	854	861	28	24	4	1
Wells	38	44	43	35	23	30	42	36	45	36	41	34	222	228	450	222	228	....	....	441	441	6	6	.....	.....
White	39	30	52	34	23	37	36	38	26	20	33	31	213	189	402	213	189	....	....	386	392	11	7	2	.....
Whitley	30	26	29	28	17	29	24	21	18	22	27	24	146	150	296	146	150	....	....	290	294	5	1	.....	.....
Grand total	4,930	4,818	4,976	4,385	4,663	4,592	5.093	5,240	4,874	4,807	4,415	4,504	29,693	28,162	57,855	29,233	27,682	460	480	52,692	53,599	4,207	3,652	398	46

TABLE B.

Births, Number of Children Born to Each Mother, Grouped Ages of Parents, Still, Plural and Illegitimate Births, for Year Ending December 31, 1912.

COUNTIES.	Total Births.	NUMBER OF CHILDREN BORN TO EACH MOTHER.												
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth and Over.	Not Reported.
Adams	531	133	109	78	61	50	33	22	13	9	9	4	14	1
Allen	1,876	653	420	274	177	126	87	62	23	18	26	7	15	6
Bartholomew	500	119	114	86	68	44	31	20	11	3	4	2	2	7
Benton	231	63	47	36	28	18	16	7	6	3	2	2	3	2
Blackford	370	90	91	57	46	28	23	17	12	4	4	1	1	1
Boone	447	131	114	68	34	32	21	23	10	7	7	1	2	1
Brown	175	29	36	26	16	22	19	9	6	6	4	2	....	1
Carroll	338	98	87	51	39	25	14	9	8	8	....	....	1	1
Cass	775	247	188	132	69	51	37	24	13	9	9	1	3	3
Clark	604	176	128	95	58	46	33	32	13	11	5	3	8	1
Clay	672	173	154	100	67	53	44	35	11	14	9	10	4	2
Clinton	505	141	109	96	41	38	41	18	8	10	3	4	3	1
Crawford	257	67	51	40	30	24	18	8	9	4	3	2	2	2
Daviess	753	180	161	126	85	51	47	45	29	16	11	2	7	1
Dearborn	403	102	90	65	57	30	21	16	9	7	5	5	8	....
Decatur	358	90	87	53	36	30	21	17	8	7	5	2	3	2
Dekalb	430	115	96	69	52	33	25	15	13	4	8	2	2	1
Delaware	1,074	301	272	170	115	82	41	31	21	17	12	10	7	3
Dubois	505	102	101	82	62	41	41	25	23	11	12	1	5	3
Elkhart	1,020	298	226	193	103	57	52	39	24	17	13	2	4	3
Fayette	268	86	60	46	23	13	17	6	8	3	2	1	3	....
Floyd	531	172	119	93	53	26	23	13	15	9	3	4	2	....
Fountain	401	113	94	57	46	29	24	15	9	8	4	1	1	2
Franklin	283	56	59	48	37	31	16	11	6	9	4	4	5	....
Fulton	330	94	79	48	46	28	14	10	5	5	2	1	1	1

Gibson	705	202	140	100	73	64	43	38	19	14	12	6	1	1
Grant	988	266	210	186	128	62	44	30	27	14	13	6	10	1
Greene	897	216	195	136	106	87	65	42	16	16	11	7	6	2
Hamilton	528	157	132	69	55	34	29	18	18	7	8	1	1	2
Hancock	314	91	77	49	30	24	19	10	7	3	1	3	2	....
Harrison	423	99	91	56	57	43	29	19	13	12	3	1	4	2
Hendricks	401	118	94	62	44	32	21	14	9	5	3	....	1	1
Henry	683	204	162	113	77	50	30	14	11	8	11	1	9	1
Howard	681	221	147	113	63	40	42	21	17	8	3	6	5	2
Huntington	688	202	169	106	82	41	31	23	13	10	9	2	6	1
Jackson	566	154	111	86	70	49	30	31	19	13	2	4	6	....
Jasper	295	74	57	45	33	29	17	13	9	5	5	6	2	2
Jay	545	135	126	89	69	35	30	25	14	13	4	4	6	3
Jefferson	376	92	82	64	47	33	20	12	8	11	3	2	1	1
Jennings	266	52	59	48	33	26	18	14	5	7	....	2	2	1
Johnson	425	127	84	68	54	32	15	22	11	6	4	2	1	1
Knox	974	247	224	128	115	90	58	36	30	18	22	8	4	2
Kosciusko	574	161	119	106	73	43	23	21	13	8	3	3	3	3
Lagrange	359	116	67	51	31	31	23	17	10	5	8	3	1	....
Lake	2,135	558	441	385	268	176	106	70	51	42	26	18	13	7
Laporte	1,038	289	233	187	107	76	49	35	32	13	10	7	7	3
Lawrence	869	225	177	130	111	74	56	29	26	16	9	9	9	3
Madison	1,423	425	314	229	135	100	81	57	38	22	12	11	8	1
Marion	5,414	2,000	1,274	741	516	301	226	148	100	66	42	20	25	4
Marshall	507	142	102	73	53	42	29	22	14	10	7	8	5	5
Martin	298	74	55	43	29	32	19	12	14	8	7	4	3	....
Miami	615	169	138	122	65	40	16	25	19	12	2	3	2	4
Monroe	623	162	133	107	68	50	29	33	15	16	5	2	5	4
Montgomery	624	181	153	87	70	47	35	19	10	18	5	3	4	1
Morgan	411	117	75	52	54	37	23	24	17	5	6	1	1	1
Newton	201	54	41	24	27	21	14	7	6	2	1	2	2	3
Noble	403	118	94	61	35	31	22	16	13	6	4	1	4	2
Ohio	68	22	19	8	4	7	1	2	2	2	1	....	....	....
Orange	433	108	97	80	49	36	27	11	16	9	3	3	1	1
Owen	275	69	59	41	36	17	20	14	7	4	3	3	1	4
Parke	406	101	56	68	52	45	25	27	13	7	6	3	6	3
Perry	413	93	79	72	52	32	29	18	9	11	13	4	6	1
Pike	458	126	90	74	43	40	31	17	16	10	7	4	4	....
Porter	374	95	80	55	48	28	24	17	12	7	7	....	6	3
Posey	471	119	93	85	69	38	26	23	9	9	2	1	1	1

TABLE B—Continued.

COUNTIES.	Total Births.	NUMBER OF CHILDREN BORN TO EACH MOTHER.												
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth and Over.	Not Reported.
Pulaski	206	67	35	22	28	15	11	6	9	2	5	3	4	1
Putnam	393	108	88	58	38	25	26	18	19	4	7	3	3	1
Randolph	569	175	128	79	58	38	27	25	15	10	8	3	3	4
Ripley	364	93	83	57	40	42	21	13	6	7	4	1	1	....
Rush	383	109	101	58	37	24	19	12	8	8	3	2	2	2
Scott	193	47	41	28	26	19	10	7	8	5	1	4	....	....
Shelby	559	165	119	106	57	43	29	21	13	5	5	1	....	2
Spencer	439	109	88	75	41	47	28	22	15	8	3	4	3	1
Starke	234	56	43	40	30	16	19	11	9	5	3	3	2	2
Steuben	229	63	61	35	25	17	15	6	4	2	1	....	....	....
St. Joseph	2,352	616	471	376	297	191	119	102	71	49	41	16	22	1
Sullivan	939	253	190	160	102	83	35	43	33	18	11	10	8	....
Switzerland	186	50	36	41	17	19	8	4	2	5	....	3	1	1
Tippecanoe	739	239	159	119	82	50	40	19	11	11	5	4	7	4
Tipton	430	114	88	65	60	40	22	6	16	9	10	3	2	1
Union	110	30	29	20	15	5	4	2	1	1	1	1	1	....
Vanderburgh	1,555	526	350	266	143	89	67	52	28	18	19	7	5	2
Vermillion	441	109	86	58	51	35	37	20	21	13	5	1	5	2
Vigo	1,588	484	326	244	173	125	105	46	38	26	21	6	5	5
Wabash	553	168	120	87	63	43	34	18	8	5	4	2	1	3
Warren	228	54	55	30	32	22	17	6	8	......	2	2	2	1
Warrick	422	105	85	56	43	49	25	18	28	8	5	1	2	3
Washington	374	95	72	66	46	21	29	14	10	7	6	7	5	1
Wayne	886	281	212	141	87	58	38	20	20	19	4	4	4	5
Wells	447	122	101	82	66	25	16	12	14	3	1	3	1	4
White	399	108	80	70	42	29	25	14	9	13	5	1	4	2
Whitley	295	87	69	51	28	21	14	10	6	4	1	1	2	2
Grand total	57,297	16,443	12,557	9,078	6,307	4,314	3,074	2,122	1,451	962	650	344	380	173

TABLE B—Continued.

Births, Number of Children Born to Each Mother, Grouped Ages of Parents, Still, Plural and Illegitimate Births, for Year Ending December 31, 1912.

COUNTIES.	Grouped Ages of Parents.														Plural Births.		Illegitimate Births.		Still-births.	
	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.	70 to 80.	Not Reported.							
	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Fathers.	Fathers.	Mothers.	Males.	Females.	Males.	Females.	Males.	Females.
Adams	8	41	235	270	189	183	83	35	16	......	......	......	......	2	7	3	3	3	10	6
Allen	15	155	918	1,100	649	532	238	82	33	1	1	1	21	5	10	26	13	11	28	26
Bartholomew	5	47	212	268	200	162	73	22	7	......	1	......	2	1	11	11	2	6	3	4
Benton	4	20	102	138	92	66	29	6	4	......	......	......	......	1	4	......	......	......	5	......
Blackford	7	55	179	212	142	93	33	10	7	......	......	......	2	......	5	5	2	4	5	3
Boone	10	53	219	229	141	138	64	25	9	......	2	......	2	2	1	7	3	6	14	3
Brown	3	15	66	85	55	55	41	19	4	......	2	1	3	1	......	2	2	......	4	1
Carroll	3	20	160	195	124	114	46	7	4	......	......	......	1	2	5	1	3	......	7	4
Cass	16	80	372	451	276	209	89	34	16	......	2	......	4	1	14	8	5	4	16	8
Clark	10	69	271	330	215	172	81	31	17	......	1	......	9	2	7	3	11	7	15	6
Clay	7	65	324	363	235	212	80	29	17	......	2	......	7	3	5	3	4	4	21	22
Clinton	7	60	237	280	185	131	65	33	8	......	1	1	1	1	12	4	1	3	11	5
Crawford	2	32	105	126	90	81	47	18	12	......	1	......	......	......	4	2	2	1	5	3
Daviess	14	75	332	424	254	219	126	33	16	......	2	2	7	2	10	6	4	4	11	8
Dearborn	3	35	163	211	158	132	69	20	6	......	......	......	4	5	7	7	2	2	6	9
Decatur	9	35	143	175	137	113	51	34	13	......	3	......	2	1	1	5	1	......	8	3
Dekalb	8	41	183	218	168	137	58	31	11	......	......	......	2	3	6	4	4	1	10	4
Delaware	21	139	523	616	360	254	134	60	24	2	......	......	12	3	10	6	6	11	19	7
Dubois	6	34	198	262	174	172	106	36	15	......	1	......	5	1	5	3	1	4	6	7
Elkhart	8	94	476	578	390	311	126	35	12	......	2	......	6	2	6	16	4	8	19	9

TABLE B—Continued.

COUNTIES.	Grouped Ages of Parents. Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.	70 to 80.	Not Reported.		Plural Births.		Illegitimate Births.		Still-births.	
	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Fathers.	Fathers.	Mothers.	Males.	Females.	Males.	Females.	Males.	Females.
Fayette	5	32	110	151	114	72	29	12	6	......	1	......	3	1	......	......	3	1	9	3
Floyd	15	57	247	292	170	155	89	27	7	......	1	......	2	......	1	1	5	3	12	12
Fountain	7	50	188	227	135	107	60	17	8	......	1	......	2	......	1	3	1	4	4	5
Franklin	2	31	98	124	106	103	64	23	5	......	5	......	3	2	2	4	2	2	......	3
Fulton	5	31	161	180	117	89	38	30	8	......	1	......	......	......	3	5	......	1	7	6
Gibson	14	80	303	373	260	215	101	34	20	......	2	......	5	3	11	5	5	8	13	8
Grant	23	129	491	554	322	270	119	33	22	......	1	......	10	2	10	8	7	6	19	11
Greene	17	109	411	485	319	268	113	34	26	......	4	......	7	1	7	9	1	12	17	8
Hamilton	9	69	258	284	178	161	63	13	13	......	1	......	6	1	4	2	6	3	7	9
Hancock	4	24	159	184	105	92	34	12	10	2	......	......	2	......	1	3	3	......	4	5
Harrison	7	35	161	222	171	148	63	17	14	......	3	......	[illegible]	1	9	3	3	1	2	7
Hendricks	5	50	194	228	141	111	50	12	7	......	......	......	4	......	3	3	6	2	7	4
Henry	8	88	348	390	232	178	72	21	15	6	2	......	6	......	11	5	9	9	10	3
Howard	12	75	323	379	243	191	85	33	14	......	1	......	3	3	5	9	1	3	13	5
Huntington	9	59	350	397	223	190	86	41	13	......	......	......	7	1	6	8	4	6	3	15
Jackson	8	67	249	289	201	179	89	31	12	......	3	......	4	......	7	11	3	5	7	8
Jasper	5	24	119	162	110	78	44	24	11	4	......	......	6	3	1	3	3	......	4	3
Jay	12	65	264	300	182	151	73	27	10	......	......	......	4	2	9	7	8	4	12	9
Jefferson	6	59	155	185	143	106	55	24	12	......	3	......	2	2	2	......	8	2	1	12
Jennings	......	27	98	142	104	75	44	21	15	......	......	......	5	1	......	2	2	4	7	5
Johnson	11	61	189	214	155	131	56	18	8	......	2	......	4	1	......	4	5	1	8	5
Knox	15	113	428	529	350	270	138	60	28	......	5	......	10	2	7	9	7	8	10	14
Kosciusko	14	58	271	323	198	101	72	30	11	......	2	......	6	2	5	5	7	6	7	7
Lagrange	5	38	159	194	131	109	51	12	5	......	......	......	8	6	6	2	4	2	5	8
Lake	7	148	942	1,326	884	579	264	75	23	......	2	......	13	7	25	27	8	5	32	34

Laporte	4	75	487	619	411	303	121	37	10	......	2	......	3	4	10	10	3	2	18	11
Lawrence	22	127	401	471	306	237	122	33	15	......	......	......	3	1	3	9	5	8	11	15
Madison	34	192	697	782	508	386	158	62	24	1	1	......	6	......	7	13	11	8	21	22
Marion	81	586	2,731	3,198	1,928	1,437	546	185	79	......	7	......	42	8	46	49	87	85	102	89
Marshall	6	44	241	291	170	146	69	24	17	......	2	......	2	2	5	5	......	......	10	12
Martin	4	33	128	147	104	98	47	20	13	......	......	......	2	......	2	2	......	2	5	3
Miami	9	72	279	328	243	187	69	27	9	......	2	......	4	1	......	4	4	4	7	8
Monroe	8	88	272	335	218	167	90	32	21	......	2	......	12	1	7	5	9	7	12	4
Montgomery	11	67	295	344	216	175	82	32	16	......	......	......	4	6	14	4	3	1	10	8
Morgan	8	45	177	229	147	120	70	16	7	1	1	......	1	......	2	2	3	3	12	11
Newton	2	18	89	109	74	59	32	13	3	......	......	......	1	2	3	3	......	......	......	......
Noble	4	30	175	222	146	130	63	21	9	......	3	......	3	......	2	6	1	2	13	10
Ohio	......	5	27	33	26	25	10	5	3	......	1	......	1	......	......	......	......	......	......	......
Orange	5	47	197	236	154	122	62	27	11	......	3	1	......	1	10	6	1	3	7	3
Owen	5	32	124	147	86	80	46	15	9	......	1	......	4	1	3	3	......	4	3	1
Parke	6	40	153	216	152	123	75	26	15	......	1	1	3	1	6	6	5	......	4	5
Perry	2	36	164	214	157	125	69	34	14	......	2	......	5	4	5	6	1	1	7	4
Pike	12	75	230	245	138	119	70	16	2	......	2	......	4	3	3	5	7	2	4	7
Porter	3	20	155	215	137	108	64	29	8	......	3	......	4	2	6	10	1	2	5	3
Posey	4	39	209	270	190	137	53	24	10	......	2	......	3	1	7	3	1	2	2	7
Pulaski	2	32	102	105	59	42	33	22	6	......	......	......	4	5	2	2	4	3	4	3
Putnam	4	41	176	220	133	103	55	26	21	......	1	3	3	......	5	5	1	1	12	11
Randolph	7	57	298	334	172	160	76	18	10	......	1	......	5	......	3	5	2	7	10	9
Ripley	2	21	129	198	156	120	66	16	9	......	......	......	2	......	3	5	1	......	4	2
Rush	4	45	174	204	144	113	45	20	8	......	1	......	7	1	1	3	6	3	8	6
Scott	1	20	81	94	73	63	28	13	7	1	1	......	2	2	4	2	1	......	6	2
Shelby	14	63	248	322	224	154	57	17	9	......	......	1	6	3	10	4	4	1	11	11
Spencer	7	41	171	230	167	143	69	24	19	......	......	......	6	1	4	6	4	3	8	4
Starke	2	20	105	134	90	66	27	14	9	......	......	......	1	......	7	2	2	......	4	2
Steuben	......	16	105	128	84	75	30	8	5	......	1	......	4	2	......	......	1	2	2	2
St. Joseph	15	180	1,049	1,380	932	687	308	100	29	......	5	......	14	5	21	19	13	8	50	31
Sullivan	21	148	435	491	321	250	128	45	23	......	1	......	10	5	9	5	10	5	8	10
Switzerland	......	15	69	87	73	69	34	12	4	......	1	......	5	3	......	2	2	1	2	4
Tippecanoe	7	67	363	436	252	203	92	27	16	......	3	......	6	6	10	12	4	5	10	6
Tipton	6	45	197	225	147	122	70	36	7	......	......	......	3	2	7	5	1	4	8	10
Union	2	10	46	57	42	36	17	6	3	......	......	......	......	1	......	......	2	......	......	1
Vanderburgh	29	168	724	898	567	401	179	82	26	2	4	......	26	4	17	17	23	26	30	16
Vermillion	4	50	165	232	195	132	66	25	7	1	......	......	4	1	3	1	2	3	3	5
Vigo	24	225	734	867	579	427	197	66	30	1	3	......	21	2	13	19	19	16	48	14

TABLE B—Concluded.

COUNTIES.	Grouped Ages of Parents.														Plural Births.		Illegitimate Births.		Still-births.	
	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.	70 to 80.	Not Reported.							
	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Mothers.	Fathers.	Fathers.	Fathers.	Mothers.	Males.	Females.	Males.	Females.	Males.	Females.
Wabash	10	68	277	306	174	150	82	27	8	......	1	......	1	2	1	5	3	4	9	9
Warren	2	24	107	126	70	64	36	14	9	......	2	......	2	......	2	4	1	......	7	5
Warrick	5	44	179	214	160	134	65	26	9	......	1	......	3	4	8	4	2	1	10	4
Washington	4	36	161	198	123	111	61	23	14	1	4	1	6	5	3	7	4	2	5	10
Wayne	8	82	355	491	376	266	118	42	21	3	2	......	6	2	9	5	9	3	6	12
Wells	9	59	236	246	144	121	45	18	8	......	......	......	5	3	5	1	......	1	4	3
White	4	37	170	227	155	115	56	20	9	......	1	......	4	......	3	3	2	2	10	6
Whitley	5	30	138	163	102	85	38	17	9	......	......	......	3	......	......	2	2	2	4	1
Grand total	819	6,059	26,319	31,929	20,748	16,380	7,587	2,723	1,204	26	129	12	479	180	557	559	451	420	988	769

TABLE C.

Number of Births and Rates per 1,000 Population by Counties, for Year 1912.

COUNTIES.	Number.	Rate.
NORTHERN COUNTIES	20,019	21.3
Adams	531	24.2
Allen	1,876	19.6
Benton	231	18.0
Blackford	370	23.2
Carroll	338	18.8
Cass	775	21.1
Dekalb	430	17.1
Elkhart	1,020	20.6
Fulton	380	19.5
Grant	968	19.3
Howard	681	20.1
Huntington	688	23.6
Jasper	295	22.5
Jay	545	21.8
Kosciusko	574	20.5
Lagrange	359	23.7
Lake	2,135	24.4
Laporte	1,038	22.3
Marshall	507	20.9
Miami	615	20.7
Newton	201	19.1
Noble	403	16.6
Porter	374	18.1
Pulaski	206	15.4
Starke	234	22.1
Steuben	229	15.9
St. Joseph	2,352	27.0
Wabash	553	20.5
Wells	447	19.8
White	399	22.6
Whitley	295	17.4
CENTRAL COUNTIES	22,536	19.9
Bartholomew	500	20.5
Boone	447	18.0
Brown	175	21.9
Clay	672	20.5
Clinton	505	18.8
Decatur	358	19.0
Delaware	1,074	20.7
Fayette	268	18.4
Fountain	401	19.6
Franklin	283	18.4
Hamilton	528	19.5
Hancock	314	16.5
Hendricks	401	19.2
Henry	683	22.4
Johnson	425	20.7
CENTRAL COUNTIES—Cont.		
Madison	1,423	21.7
Marion	5,414	20.0
Monroe	623	21.3
Montgomery	624	21.1
Morgan	411	19.3
Owen	275	19.5
Parke	406	18.2
Putnam	393	19.1
Randolph	569	19.5
Rush	383	19.7
Shelby	559	20.6
Tippecanoe	739	18.3
Tipton	430	24.5
Union	110	17 5
Vermillion	441	22.9
Vigo	1,588	17.5
Warren	228	20.9
Wayne	886	20.0
SOUTHERN COUNTIES	14,742	22.2
Clark	604	19.9
Crawford	257	21.3
Daviess	753	27.1
Dearborn	403	18.7
Dubois	505	25.4
Floyd	531	17.5
Gibson	705	23.3
Greene	897	23.7
Harrison	423	20.9
Jackson	566	22.8
Jefferson	376	18.3
Jennings	266	18.7
Knox	974	24.4
Lawrence	869	27.9
Martin	298	22.8
Ohio	68	15.7
Orange	433	25.1
Perry	413	22.7
Pike	458	23.2
Posey	471	21.6
Ripley	364	18.6
Scott	193	23.1
Spencer	439	21.2
Sullivan	939	28.3
Switzerland	186	18.7
Vanderburgh	1,555	19.8
Warrick	422	19.1
Washington	374	21.4
STATE	57,297	20.9
HIGHEST RATE—		
Sullivan County	939	28.3
LOWEST RATE—		
Pulaski County	206	15.4

TABLE D.

Marriages by Months, Color and Nationality, for the Year Ending December 31, 1912.

COUNTIES.	1912.												Color.		Nationality.						Total.
															American		Foreign.		Not Reported.		
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	White.	Colored.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Adams	17	11	10	20	15	19	15	8	15	21	25	26	202	......	140	143	43	40	19	19	202
Allen	57	60	45	97	77	153	79	82	69	122	90	59	973	17	916	939	74	50	......	1	990
Bartholomew	15	16	17	21	13	24	1	21	24	21	37	25	231	6	233	234	4	3	......	......	237
Benton	10	15	4	6	3	11	8	8	13	7	3	12	99	1	97	95	3	5	......	......	100
Blackford	10	10	7	13	8	18	12	12	11	10	9	21	141	......	140	141	1	......	......	......	141
Boone	27	30	19	15	10	11	11	12	20	14	23	30	222	......	221	222	1	......	......	......	222
Brown	1	7	5	4	8	6	2	3	4	4	6	6	56	......	56	56	......	......	......	......	56
Carroll	17	14	8	8	7	15	5	13	13	21	14	12	147	......	147	146	......	1	......	......	147
Cass	24	16	13	41	23	31	8	29	28	35	40	26	312	2	250	249	33	27	31	38	314
Clark	91	34	83	99	105	129	89	50	113	97	90	63	886	157	1,015	1,037	28	6	......	......	1,043
Clay	10	33	16	32	18	26	15	29	15	26	28	41	283	6	275	285	14	4	......	......	289
Clinton	18	30	16	20	17	22	16	18	25	34	27	34	277	......	274	276	3	1	......	......	277
Crawford	8	6	8	9	12	10	10	8	12	7	9	10	109	......	67	85	26	17	16	7	109
Daviess	25	18	15	19	19	26	20	12	22	27	25	26	251	3	251	252	1	......	2	2	254
Dearborn	15	14	9	19	7	21	14	20	11	26	21	21	196	2	195	197	3	1	......	......	198
Decatur	12	11	8	7	8	16	14	15	27	16	17	25	176	......	176	176	......	......	......	......	176
Dekalb	17	26	17	16	15	21	12	9	20	27	22	32	233	1	229	233	5	1	......	......	234
Delaware	34	39	27	59	34	58	50	53	24	60	47	82	555	12	561	565	6	2	......	......	567
Dubois	12	18	5	11	20	16	10	5	16	11	30	9	162	1	160	163	3	......	......	......	163
Elkhart	37	36	25	40	27	62	48	45	46	43	49	55	512	1	469	483	25	16	19	14	513

Fayette	8	8	7	9	2	15	8	16	7	9	12	10	105	6	111	111	......	......	......	......	111
Floyd	17	20	10	18	31	35	19	18	31	39	31	29	287	11	293	292	5	5	1	1	298
Fountain	18	17	15	14	8	13	5	7	15	27	17	24	180	......	178	180	2	......	......	......	180
Franklin	6	14	5	4	7	11	4	8	11	7	8	12	97	......	88	90	9	7	......	......	97
Fulton	8	6	9	12	13	11	19	5	14	12	14	12	135	......	135	135	......	......	......	......	135
Gibson	23	18	14	22	7	12	22	22	14	28	24	21	213	14	223	227	4	......	......	......	227
Grant	41	34	45	45	30	53	46	50	28	54	46	76	529	19	536	541	10	7	2	......	548
Greene	34	28	28	30	20	24	18	23	33	29	23	36	326	......	309	312	17	14	......	......	326
Hamilton	23	20	12	18	12	17	12	23	31	32	31	38	263	6	268	267	1	2	......	......	269
Hancock	7	12	11	5	11	17	6	23	10	10	16	32	159	1	158	160	2	......	......	......	160
Harrison	11	8	12	13	4	16	9	10	13	5	8	14	121	2	123	123	......	......	......	......	123
Hendricks	17	7	13	6	8	18	16	13	17	13	19	15	161	1	158	161	2	1	2	......	162
Henry	17	21	8	17	9	27	16	18	17	43	30	27	243	7	244	247	6	3	......	......	250
Howard	29	34	31	39	32	38	22	27	34	45	31	51	400	13	402	406	11	7	......	......	413
Huntington	16	20	24	19	25	17	17	21	34	32	23	33	281	......	217	218	3	2	61	61	281
Jackson	7	20	15	16	14	22	14	19	22	21	14	24	207	1	206	205	2	3	......	......	208
Jasper	11	16	7	7	10	11	4	3	12	4	11	20	115	1	107	106	9	10	......	......	116
Jay	15	27	11	19	18	19	7	15	25	19	12	33	219	1	......	......	......	......	220	220	220
Jefferson	9	16	10	20	11	18	8	21	13	21	31	15	187	6	193	193	......	......	......	......	193
Jennings	13	7	4	10	5	8	10	8	13	12	6	11	106	1	106	107	1	......	......	......	107
Johnson	7	14	10	13	12	9	14	15	23	15	12	18	157	5	161	161	......	......	1	1	162
Knox	38	36	35	36	36	48	34	29	42	47	52	78	505	6	500	509	11	1	......	1	511
Kosciusko	18	12	27	12	22	20	17	20	23	29	32	32	263	1	264	264	......	......	......	......	264
Lagrange	9	14	9	6	10	17	3	9	11	11	11	23	133	......	133	133	......	......	......	......	133
Lake	143	143	117	174	220	215	209	191	194	256	276	224	2,277	85	1,714	1,818	642	538	6	6	2,362
Laporte	44	35	22	51	33	67	58	61	42	78	59	25	569	6	456	469	119	106	......	......	575
Lawrence	21	20	14	30	25	34	31	26	31	28	27	23	308	2	302	303	8	7	......	......	310
Madison	39	58	40	52	55	63	43	49	54	62	56	77	629	19	631	638	17	10	......	......	648
Marion	311	204	162	293	252	391	252	307	299	431	341	296	3,116	423	3,303	3,333	236	201	......	5	3,539
Marshall	19	11	18	24	13	20	15	8	27	23	18	25	221	......	215	217	6	4	......	......	221
Martin	12	15	8	15	5	6	7	5	12	5	7	15	112	......	112	112	......	......	......	......	112
Miami	23	32	26	32	24	33	17	26	17	23	28	33	310	4	307	312	7	2	......	......	314
Monroe	27	24	25	22	22	25	24	22	23	22	19	21	269	7	272	276	4	......	......	......	276
Montgomery	17	19	26	18	13	33	14	23	20	33	25	34	272	3	270	273	5	2	......	......	275
Morgan	12	20	24	17	20	20	15	11	13	18	22	21	213	......	213	213	......	......	......	......	213
Newton	8	6	6	3	3	8	2	3	9	7	8	10	73	......	69	71	4	2	......	......	73
Noble	11	15	19	19	21	19	17	12	15	18	15	22	203	......	198	203	5	......	......	......	203
Ohio	2	4	5	4	......	4	5	2	6	5	6	7	50	......	50	50	......	......	......	......	50
Orange	23	12	12	16	21	14	15	11	15	24	24	6	190	3	193	193	......	......	......	......	193
Owen	12	7	12	9	3	16	9	12	11	13	13	12	126	3	129	129	......	......	......	......	129

TABLE D—Concluded

COUNTIES.	1912.												COLOR.		NATIONALITY.						
															American		Foreign.		Not Reported.		
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	White.	Colored.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Total.
Parke	10	9	19	15	13	12	10	13	21	16	18	17	172	1	170	172	3	1	......	......	173
Perry	11	9	8	20	9	15	8	11	19	18	18	16	159	3	133	134	1	......	28	28	162
Pike	33	8	12	21	8	12	12	20	19	9	10	29	193	......	171	163	3	1	19	29	193
Porter	11	14	19	21	16	30	16	14	21	27	20	24	229	4	213	205	20	27	......	1	233
Posey	18	29	14	25	17	22	23	24	17	5	10	13	207	10	89	89	......	......	128	128	217
Pulaski	12	8	13	10	7	14	2	9	14	8	10	17	123	1	123	124	1	......	......	......	124
Putnam	9	14	10	12	14	18	11	13	23	16	8	22	167	3	170	170	......	......	......	......	170
Randolph	12	15	17	23	14	13	13	26	26	24	27	34	243	1	244	244	......	......	......	......	244
Ripley	1	7	6	17	7	8	4	10	12	5	9	9	95	......	94	95	1	......	......	......	95
Rush	8	11	10	11	5	3	11	10	19	26	13	14	138	3	141	141	......	......	......	......	141
Scott	1	6	2	4	7	3	2	9	2	7	5	11	59	......	59	59	......	......	......	......	59
Shelby	15	16	17	14	11	19	16	22	17	25	27	27	219	7	218	218	2	2	6	6	226
Spencer	14	36	16	33	22	21	22	30	28	33	42	34	314	17	163	163	......	......	168	168	331
Starke	6	8	7	8	8	6	8	7	3	5	7	7	80	......	50	53	8	5	22	22	80
Steuben	5	11	7	14	7	13	5	6	10	11	12	12	112	1	112	113	1	......	......	......	113
St Joseph	46	108	53	48	59	82	115	63	91	102	73	99	930	9	691	751	247	188	1	......	939
Sullivan	23	30	18	32	20	21	22	19	22	39	30	34	308	2	290	297	20	13	......	......	310
Switzerland	5	3	4	3	1	4	3	5	2	6	4	10	50	......	48	49	2	1	......	......	50
Tippecanoe	27	37	27	32	21	62	24	29	30	51	40	48	421	7	416	417	12	11	......	......	428
Tipton	10	24	10	7	11	6	7	10	11	17	21	20	154	......	154	152	......	2	......	......	154
Union	1	2	4	3	1	4	1	4	3	3	3	4	33	......	33	33	......	......	......	......	33
Vanderburgh	41	90	63	74	103	168	105	91	84	130	96	138	1,080	103	1,045	1,072	138	111	......	......	1,183
Vermillion	12	22	12	13	5	15	13	9	9	12	16	24	160	2	130	135	32	27	......	......	162
Vigo	82	85	73	103	85	119	82	104	110	92	133	144	1,151	61	1,133	1,162	73	44	6	6	1,212

Wabash	15	23	16	22	29	24	22	21	28	23	27	48	297	......	297	297	......	......	......	......	297
Warren	8	5	7	4	6	14	6	8	13	11	14	13	108	1	107	107	2	1	......	1	109
Warrick	11	15	14	22	18	14	14	16	7	10	17	27	176	9	185	185	......	......	......	......	185
Washington	1	14	15	6	6	12	8	11	7	16	16	27	139	......	113	113	......	......	26	26	139
Wayne	30	29	19	26	28	42	25	33	27	47	40	44	360	30	384	386	6	4	......	......	390
Wells	13	18	13	20	7	14	20	16	17	11	23	20	192	......	191	192	1	......	......	......	192
White	13	19	12	7	8	5	7	9	10	12	20	17	139	......	136	138	3	1	......	......	139
Whitley	9	10	16	8	9	11	14	13	9	12	21	9	141	......	141	141	......	......	......	......	141
Grand total	2,096	2,232	1,818	2,423	2,117	2,985	2,173	2,329	2,540	3,068	2,900	3,162	28,702	1,141	27,062	27,505	1,997	1,547	784	791	29,843

TABLE E.

Marriages, Grouped Ages, for the Year Ending December 31, 1912.

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Totals.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Adams	13	59	148	127	25	11	10	3	6	2									202
Allen	13	158	691	651	200	120	47	41	30	14	8	4	1					2	990
Bartholomew	3	55	157	131	39	25	18	19	16	7	3		1						237
Benton	3	27	76	58	12	9	5	4	3	1	1	1							100
Blackford	7	58	98	62	16	9	8	8	9	4	3								141
Boone	21	55	160	137	21	15	8	5	8	5		3	4					2	222
Brown		26	41	20	5	2	4	4	4	4	1		1						56
Carroll	9	48	111	81	17	10	6	5	2	2	1	1	1						147
Cass	7	76	210	175	58	32	21	17	13	6	3	2	1				1	6	314
Clark	32	455	759	448	172	106	57	28	16	4	5	2	2						1,043
Clay	13	61	196	189	42	22	21	7	12	6	3	3	1		1			1	289
Clinton	35	69	167	166	40	22	17	19	8	4	8	5	2					1	277
Crawford	51	56	24	23	15	14	11	10	7	5	1	1							109
Daviess	3	68	186	153	40	17	11	7	5	4	4	5	5						254
Dearborn	2	31	121	124	55	31	13	7	4	4	2	1	1						198
Decatur	2	33	111	105	30	16	14	13	11	4	4	3	4	2					176
Dekalb	6	70	165	115	27	24	16	9	12	12	5	4	3						234
Delaware	19	152	373	305	104	54	29	29	22	18	14	6	5		1			3	567
Dubois	8	46	117	96	20	11	12	8	5	1		1	1						163
Elkhart	7	105	356	304	84	50	29	36	20	11	11	6	5		1			1	513
Fayette	5	26	77	64	21	16	6	4	1		1	1							111
Floyd	16	76	187	157	56	44	15	9	17	10	3	2	4						298
Fountain	6	48	120	103	30	16	12	8	8	2	1	3	1		2				180
Franklin	2	24	65	59	20	9	6	5	4										97
Fulton	3	27	94	86	19	13	10	4	4	3	2	1	1	1			2		135

Gibson	6	58	168	135	36	24	9	5	4	4	3	1	1	......	......	......	......	......	227
Grant	16	180	394	265	57	46	34	29	22	17	15	5	5	1	2	1	3	4	548
Greene	19	131	224	141	33	22	29	17	13	9	6	3	......	......	......	......	2	3	326
Hamilton	7	60	192	163	41	27	12	11	8	4	6	3	2	......	......	......	1	1	269
Hancock	5	38	111	92	24	17	9	1	2	9	6	2	3	1	......	......	......	......	160
Harrison	8	33	78	61	20	18	6	3	5	2	4	4	1	......	......	......	1	2	123
Hendricks	3	25	109	105	33	24	11	8	4	......	1	......	......	......	......	......	1	......	162
Henry	3	51	166	148	50	31	11	12	8	4	7	......	3	3	......	......	2	1	250
Howard	19	130	286	218	64	31	18	16	13	8	7	5	6	2	......	1	......	2	413
Huntington	6	58	213	179	37	23	8	10	8	7	8	4	......	......	......	......	1	......	281
Jackson	6	43	136	120	34	20	10	10	12	9	6	5	4	......	......	......	......	1	208
Jasper	3	23	78	77	21	7	7	4	2	2	3	2	1	......	......	......	1	1	116
Jay	6	63	164	119	23	18	15	7	4	8	4	......	4	1	......	......	......	4	220
Jefferson	9	59	128	100	35	22	9	6	7	2	4	4	......	......	......	......	1	......	193
Jennings	2	28	64	53	20	15	12	6	4	3	4	1	1	1	......	......	......	......	107
Johnson	8	51	118	88	17	12	11	5	5	3	3	3	......	......	......	......	......	......	162
Knox	10	143	336	279	105	49	33	21	16	13	10	5	1	......	......	......	......	1	511
Kosciusko	42	108	163	114	23	12	13	11	10	7	3	6	7	1	......	......	3	5	264
Lagrange	5	42	100	70	12	14	9	4	6	2	1	1	......	......	......	......	......	......	133
Lake	4	379	1,420	1,402	628	411	225	131	65	26	17	8	1	......	......	......	2	5	2,362
Laporte	9	142	409	328	95	74	36	19	16	7	5	3	5	2	......	......	......	......	575
Lawrence	16	107	207	142	50	32	14	13	10	8	7	7	5	1	......	......	1	......	310
Madison	28	178	429	342	112	76	34	27	23	14	13	8	5	......	2	......	2	3	648
Marion	113	834	2,294	1,986	687	464	276	172	117	57	35	15	12	4	1	......	4	7	3,539
Marshall	9	59	154	121	25	19	15	16	10	1	1	2	2	......	......	......	5	3	221
Martin	5	42	76	54	16	4	7	7	4	4	1	1	3	......	......	......	......	......	112
Miami	20	101	220	160	38	35	14	7	11	7	8	3	3	1	......	......	......	......	314
Monroe	28	86	120	110	79	48	29	24	14	7	5	......	......	......	......	......	1	1	276
Montgomery	6	59	196	168	38	27	20	12	7	7	6	1	2	1	......	......	......	......	275
Morgan	27	74	115	80	41	35	16	18	9	5	5	1	......	......	......	......	......	......	213
Newton	5	16	37	35	9	6	5	3	3	1	4	2	......	......	......	......	10	10	73
Noble	4	61	137	95	31	27	18	11	8	3	4	2	1	1	......	......	......	3	203
Ohio	6	13	33	27	6	7	2	......	......	1	2	1	1	1	......	......	......	......	50
Orange	6	57	139	110	28	19	12	3	3	2	3	2	1	......	1	......	......	......	193
Owen	5	46	85	65	20	5	8	8	6	2	3	2	......	1	1	......	1	......	129
Parke	9	42	114	103	28	16	9	7	8	3	3	2	2	......	......	......	......	......	173
Perry	6	48	120	97	22	9	6	3	4	3	1	......	3	1	......	......	......	1	162
Pike	12	74	137	88	22	19	10	5	6	7	3	......	3	......	......	......	......	......	193
Porter	1	28	143	142	61	44	14	10	5	5	4	1	3	1	......	......	2	2	233
Posey	22	79	133	105	37	17	8	3	6	5	2	2	5	1	......	......	4	5	217

TABLE E—Concluded.

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Totals.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Pulaski	7	41	90	71	15	4	6	5	4	2	1	1	1						124
Putnam	15	64	100	71	27	16	15	13	10	3	1						2	3	170
Randolph	10	62	169	138	35	17	12	13	5	5	7	7	6	2					244
Ripley		20	67	62	17	8	4	2	1	1	1						5	2	95
Rush	4	25	98	92	21	10	6	4	2	8	6	1	3				1	1	141
Scott	1	16	37	25	6	5	4	5	2	4	7	2	1		1			2	59
Shelby	6	55	143	129	49	20	14	11	5	8	7	3	2						226
Spencer	3	90	251	209	49	12	9	9	11	5	6	2		1			2	3	331
Starke	1	26	67	45	6	5	1	1	4	1	1	2							80
Steuben	1	22	76	67	16	9	7	5	6	7	7	2						1	113
St. Joseph	11	179	634	574	192	121	60	37	26	19	15	9	1						939
Sullivan	13	115	224	158	42	20	19	9	9	6	2	2	1						310
Switzerland	1	11	31	32	12	3	4	2	1	2	1								50
Tippecanoe	11	98	282	234	84	57	25	20	13	11	8	5	5	1				2	428
Tipton	21	78	99	54	20	9	7	8	2	4	5	1							154
Union	1	4	24	25	6	2	2	2											33
Vanderburgh	16	226	798	742	228	142	85	46	38	14	9	3	3				6	10	1,183
Vermillion	1	52	108	86	34	11	12	9	4	2	1	2	2						162
Vigo	57	320	803	673	224	134	70	49	38	26	11	7	4			1	5	2	1,212
Wabash	6	57	217	189	41	28	15	14	11	6	6	2					1	1	297
Warren	13	54	74	39	13	11	6	4	2	1	1								109
Warrick	6	40	129	118	27	18	14	2	4	3	2	2	1				2	2	185
Washington	12	50	88	70	22	12	11	4	2	1	3	2	1						139
Wayne	7	79	278	234	65	46	17	11	8	9	11	8	2	1	2			2	390
Wells	5	62	149	108	18	10	11	5	1		3	1					5	6	192
White	3	29	98	85	16	18	12	2	6	3	2	2	1				1		139
Whitley	1	22	92	93	33	15	7	5	4	4	4	2							141
Grand total	1,043	7,646	19,982	16,649	5,244	3,287	1,905	1,291	954	576	445	240	174	33	15	3	81	118	29,843

INDIANA STATE BOARD OF HEALTH

SEVENTH ANNUAL REPORT

OF THE

Division of Bacteriology and Pathology

OF THE

STATE LABORATORY OF HYGIENE

For the Year Ending September 30, 1912

DR. WILL SHIMER, M.D
Superintendent

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LABORATORY STAFF.

J. P. Simonds, A. B., M. D., Superintendent.
(Resigned August 31, 1912.)

Will Shimer, A. B., M. D., Assistant Superintendent.
(Appointed Superintendent September 1, 1912.)

Ada E. Schweitzer, M. D., Assistant Bacteriologist.

L. B. Clore, B. S., Assistant Bacteriologist.
(Resigned September 4, 1912.)

Hervey M. Hooker, Clerk and Stenographer.

Robert P. Johnson, Technical Assistant.

L. W. Barry, M. D., Assistant Pathologist.
(Appointed September 1, 1912.)

K. W. Hidy, M. D., Assistant Pathologist.
(Appointed September 1, 1912.)

SEVENTH ANNUAL REPORT OF THE DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY OF THE INDIANA STATE LABORATORY OF HYGIENE.

INTRODUCTION.

The year ending September 30, 1912, has been the most successful in the history of the Laboratory. The total number of specimens examined greatly exceeds the largest number examined in any previous year. The work of the Laboratory in assisting local authorities to deal with numerous epidemics of diphtheria, which were unusually prevalent throughout the State during the last three months of 1911, impressed local health officers, school authorities and citizens with the efficiency of scientific control of diphtheria by means of bacteriological examinations. Several new phases of work have helped to bring the Laboratory into closer touch with the people of the State as well as with the physicians. These new lines of work were: the furnishing of hygiene exhibits for use in schools in the teaching of hygiene; the introduction of an outfit in which samples of stools from suspected typhoid bacilli carriers may be sent to the Laboratory for examination; and the supplying of antityphoid vaccine free to physicians for use on any patient desiring to be immunized against typhoid fever.

The increase in the work of the Laboratory is shown in Table 1.

TABLE 1.

Showing the Total Number of Specimens Examined Each Year for Five Years.

1908	8,087
1909	7,951
1910 (11 months)	8,786
1911	11,142
1912	18,276

This increase is largely due to the occurrence of numerous epidemics of diphtheria in various parts of the State during the fall of 1911. That the growth affected all departments of the work, however, is shown by Table 2.

TABLE 2.

Summarising Routine Examinations for Seven Years.

Year.	Sputum.	Diphtheria.	Typhoid.	Malaria.	Pathological Tissues.	Rabies.	Gonorrhea.	Miscellaneous.	Total.	Average Per Day.
1906	1,503	171	499	......	......	......	......	66	2,239	7
1907	2,116	633	802	45	......	......	......	395	3,991	12
1908	3,136	2,779	1,270	167	165	82	178	310	8,087	26
1909	3,458	1,445	1,508	194	187	144	349	666	7,951	25
1910	3,583	1,638	1,404	189	309	134	430	1,099	8,786	28
1911	4,228	2,452	2,038	203	415	243	534	1,029	11,142	35
1912	4,688	9,377	1,850	200	714	314	587	546	18,276	58

The average number of examinations per day has increased from 7 in 1906 to 58 in 1912. The average cost of examination per specimen in 1912 was approximately 54 cents.

A HYGIENE EXHIBIT FOR USE IN SCHOOLS.

The teaching of hygiene should include as far as possible the use of such experiments as will illustrate to the pupils the facts which are presented. Few schools are equipped with apparatus for the preparation of specimens for such use. To meet this need the Bacteriological Laboratory of the State Board of Health has arranged to prepare exhibits to be sent to schools for use in the teaching of hygiene. Each exhibit will be prepared to meet the needs of the particular school requesting it. The attempt is made to furnish materials with which the teachers and pupils can make the experiments themselves, rather than to furnish the finished results of such experiments. The following tentative outline has been prepared and is sent with each exhibit:

DIRECTIONS FOR USE OF HYGIENIC EXHIBIT.

The exhibit consists of microscopic slides, on which are stained specimens of various bacteria, and Petri dishes containing culture media for experiments in the class. All the germs sent with the outfit have been killed and the specimens can be handled without danger.

An oil immersion lens is necessary for proper examination of the stained specimens of bacteria.

SLIDES.

No. 1. *Bacillus of diphtheria.* Note that the rod-shaped organisms stain unevenly. Some are somewhat club-shaped. These germs are the cause of diphtheria.

No. 2. *Bacillus of tuberculosis.* Note the short, thin rod-shaped bodies are stained red, while the other things on the slide are blue. These tiny red rods, often seen lying together in masses, are the germs that cause tuberculosis.

No. 3. *Staphylococci.* These are small round germs that get together in bunches. They are the cause of boils.

No. 4. *Bacillus of typhoid fever.* Note the plump rods. These germs can swim quite rapidly in water or milk. They cause typhoid fever.

PETRI DISHES.

BE VERY CAREFUL NOT TO REMOVE THE TOPS FROM THE DISHES EXCEPT AS DIRECTED BELOW. Germs are everywhere and some will get in every time the dish is opened. The experiment will be spoiled if some get in before you are ready.

EXPERIMENT No. 1.

Use Dish No. 1. Have some member of the class whose fingers are visibly dirty touch the jelly-like material in the bottom of the dish over the letter D. Lift the cover just enough for him to get his finger inside and close it immediately after he has touched the jelly. He should not press hard enough on the jelly to mash it out of shape.

Have this same member of the class thoroughly wash his hands in clean water, using soap, and dry them on a *clean* towel. Immediately afterward have him touch the jelly in the same dish over the letter C, raising the lid as before. Set this dish aside in a warm place along with the others, to be examined on the following day.

If the experiment has been properly carried out there should be a copious growth of various kinds of germs at the place touched with the dirty finger and little or no growth at the point touched by the clean finger. This shows the necessity of washing our hands before eating. Touching our food with dirty fingers deposits germs on it just as it did in the case of the jelly. Less than one hundred of the three thousand or more known varieties of germs will cause disease. But there is no way of knowing until it is too late, when we have typhoid or diphtheria, or some other disease-producing germs on our fingers along with the numerous harmless ones. To be always safe, see that your hands are really clean before you eat.

EXPERIMENT No. 2.

Use dishes Nos. 2 and 3. Set dish No. 2 on a chair in a quiet room (i. e., in one in which there are no currents of air and no persons walking about), and remove the lid for two minutes *by the watch*. Replace the lid and set this dish aside to be put in a warm place till next day along with the others.

Now sweep the floor vigorously without sprinkling it. Immediately after sweeping, set dish No. 3 on the same chair in the same place as dish No. 2 and remove the lid for two minutes *by the watch*.

After these dishes have been kept in a warm place for twenty-four to forty-eight hours, dish No. 2 should show only a few isolated masses of bacteria, while No. 3 will show very many such masses. This experiment shows how germs are scattered by dry sweeping and dry dusting. The germs of tuberculosis in dried sputum may thus be stirred up, float as dust and be taken into our lungs with the air we breathe.

After the dish has been kept in a warm place for twenty-four hours each mass or spot seen on the surface of the jelly is called a colony and represents a family of bacteria. The mother germ of each colony is so small that it must be magnified many hundred times to be seen at all. The colony is visible because it is made up of many millions of individual germs, all descendants of the original mother germ who "settled" on that spot when the lid was off.

Germs multiply very rapidly. A germ will grow to nearly twice its normal length and then split into two. If we start with one germ and it and each of its descendants split into two every half hour, at the end of twelve hours there will be almost 17,000,000 germs in the family. In twenty-four hours there will be so many that it will require fifteen figures to express the number. This is why we can see the masses of germs after they have been allowed to grow on the jelly.

EXPERIMENT No. 3.

Use dishes Nos. 4 and 5. Remove the medicine dropper from the glass tube and draw up into it some of the drinking water used by the school, being careful not to allow the point of the dropper to touch anything but the water. Carefully allow one drop of water to fall from the dropper on to the middle of the jelly in dish No. 4. Replace the lid and, by tilting the dish, allow the water to run over the surface of the jelly. Set this dish aside with the others.

Now take some of the same water and boil it *and the medicine dropper* for fifteen minutes. Place one drop of this boiled water in the center of the jelly in dish No. 5, and, by tilting the dish, allow it to run over the surface. Set this dish aside in a warm place for twenty-four hours.

Numerous masses of bacteria will be seen in dish No. 4, where the water came in contact with the jelly. Dish No. 5 should show very few masses of germs, or none at all.

This experiment shows that heat kills germs. The house-wife, when she cans fruit and vegetables, uses this same principle. Germs cause canned fruit to spoil. When the fruit is boiled for several minutes and then sealed up in jars that have also been boiled, the germs are all killed, and the fruit keeps. Some germs, however, form *spores*. These correspond somewhat to seeds in fruit. They are very hard to kill and must be boiled for a long time, in some cases for an hour, before they are all dead. The presence of these spores accounts for the occasional spoilng of fruit even when it has been boiled for some time. If there are any masses of germs on dish No. 5, they probably grew from some of these spores which were in the water and were not killed by boiling.

All ordinary drinking water contains germs, as was shown in this experiment. Most of them are quite harmless. But sometimes typhoid germs may get into water and then it becomes very dangerous. This occurs most often when outhouses are built too close to shallow dug wells when the surface drainage or underground seepage may carry these germs, which are discharged in human excrement, into the well. The bacilli of typhoid fever may also get into driking water when the sewage of one city is discharged into a river from which another city lower down stream gets its supply of drinking water.

EXPERIMENT No. 4.

Use dish No. 6. Straighten out the wire and carefully remove the swab from the small glass tube. Rub the cotton end of the swab over the edge of a common drinking cup. Now rub the swab gently over the jelly in dish No. 6 by drawing it across the surface several times. This should be done quickly, so the lid will be kept off for as short a time as possible.

Before sending the swab from the laboratory it was heated in steam under pressure for a long time and had no live germs on it. All those germs which grew on the jelly came from the drinking cup. If a child with diphtheria or tuberculosis drinks from such a cup he is almost sure to deposit some of the germs of these diseases on the edge of the cup and the next person using it may get them into his mouth and get the disease. Hence the danger of the common drinking cup.

EXPERIMENT NO. 5.

Use dish No. 7. Remove the lid, hold the open dish two feet in front of the face of a member of the class and have him cough strongly. Be sure the open dish is in line with current of air expelled in coughing. Replace the cover and set the dish aside for twenty-four hours.

This experiment will show that the fine, invisible spray expelled in coughing contains germs. The spray from a patient with consumption is loaded with the germs of that disease. This spray is light and floats in the air for some time. There is far greater danger of getting tuberculosis by inhaling the spray from such a patient than from breathing dust containing dried sputum from a consumptive.

EXPERIMENT NO. 6.

Use dish No. 8. It is necessary to send this specimen already prepared. Typhoid germs were sown evenly over the entire surface of the jelly in dish No. 8. Seven black letters, one inch high and spelling the word TYPHOID, were pasted on the bottom of the dish. The dish was then placed, bottom up, in the bright sunshine for three-quarters of an hour. Those germs immediately beneath the letters were protected from the sunlight and were not killed. Those in other parts of the dish were practically all killed. The living germs were allowed to grow for twenty-four hours and we have the word Typhoid written with the bacilli themselves. Place the dish, bottom up, on a black background and the results are plainly seen. If the dish had been left in the sunshine for a longer time there would have been no living germs left except under the black letters. Bright sunlight is one of the best germ-killers known. Let as much of it as possible into your home.

TYPHOID CARRIERS.

The general discussion of the examination of samples of stools sent to the Laboratory in the new outfit will be found in another part of this report.

The following histories of typhoid carriers are of interest:

Under date of April 20, 1912, we received a letter from Dr. E. C. Loomis, Perrysville, Ind., asking for a water container and stating that he had seven cases of typhoid in two families. From the few facts stated in Dr. Loomis' first letter it was evident that this localized epidemic had some of the characteristics of one due to a "carrier." Accordingly four bile media outfits were sent to Dr. Loomis with the request that he send us cultures from the stools of some of the patients and from any member of either family, especially any women, who had had typhoid at any time previously. On April 23 Dr. Loomis sent two cultures from stools, and the following history:

Three families were concerned in the epidemic, namely, those of William Julian, John Julian and Edward Whyde. John Julian was a brother of William and son-in-law of Edward Whyde. The epidemic began early in February, when two children, a boy of fifteen and a girl of five, of William Julian became ill with typhoid. The boy was sick eighteen days and died. On February 15, ten days before the death of this boy, John Julian came with his family from Michigan and lived in the home of William Julian until March 1st, when he moved to the home of Edward Whyde. The two families were very poor and the house very small. There were eleven persons in the two families and they were crowded together into one room.

On the same day on which John Julian's family went to the Whyde home, namely, March 1st, Verne Julian, seven years old, became ill with typhoid. Three days later, John Whyde, 15 years of age, developed the disease. A few days later, Drexel Whyde, 7 years old, was taken with typhoid, and on March 17 John Julian came down with the disease. On April 12 Roy Whyde, age 18, developed typhoid. There were thus seven cases of typhoid fever among the seventeen members of these three families.

Two specimens of Mrs. William Julian's stool, taken on April 23 and May 11, respectively, were found to contain great numbers of typhoid bacilli. In 1903 she had typhoid fever and was sick sixty-seven days. Since December, 1911, Mrs. Julian had suffered with some obscure gall bladder symptoms with jaundice. There had not been a case of typoid fever in Perrysville for ten years, "except one last year, contracted elsewhere."

There seems little reason to doubt but that the epidemic was started by Mrs. Julian, who was a "carrier." Just why nine years should have elapsed between the time of her attack of typhoid fever and the outbreak of the disease in her family is not easily explained. It has been shown in numerous instances that typhoid carriers vary from time to time in their "effectiveness" in transmitting the disease to others. It is well known that the gall bladder is the usual harbor for typhoid bacilli in "carriers." The onset of symptoms referable to the gall bladder may indicate an increase of virulence in the bacilli being harbored by Mrs. Julian, and an increase of her "effectiveness."

The actual medium of transmission was not definitely discovered. An examination by the Water Laboratory of water from a dug well used by William Julian's family showed the following:

Free ammonia	.0018
Albummoid ammonia	.0010
Chlorine	5.0000
Nitrates	3.5000
Nitrates	.0002

B. coli present.

The water of this well was badly polluted and unfit for drinking purposes. It may therefore have been the medium of transmission of the infection. If so, the "carrier" was the most probable source of the contamination of the well. Some of the cases were probably "contact cases." There was free visiting between the Whyde and Julian families after John Julian moved from Michigan. Hence there was abundant opportunity for the disease to spread among the members of the three families.

After it had been proved that Mrs. William Julian was a typhoid carrier, the following letter was written to Dr. Loomis outlining what appears to be the most rational way of dealing with a carrier whose work is limited to the home:

MAY 7, 1912.

Dr. E. C. Loomis, Perrysville, Ind.:

Dear Doctor—It has been ten days since we received the cultures from the stools of Ray Whyde and Mrs. Julian. The long delay in sending the report has been due to the fact that I was anxious to be sure of my ground and hence have repeated the tests more than once. The results are very interesting.

In order to avoid any possible bias in connection with these cultures I merely took the names without looking at the history. I did not even know the sex or age of the patients, merely having the names Julian and Whyde on the specimens as carried through the various tests. From the stool of Mrs. Julian I have obtained several cultures of organisms which have all the earmarks of typhoid bacilli, even to agglutination with antityphoid serum. It was a surprise to me when I found that these apparently positive cultures were from the patient who had had typhoid nine years before. The fact that she has had jaundice rather supports this finding. It is generally recognized that the gall bladder is the harbor for typhoid bacilli in the body of a typhoid carrier.

I am sending you two new outfits in which I hope you will send us another culture from each of these patients, Mrs. Julian and Ray Whyde. It is necessary, of course, that we be perfectly sure of our ground in a case of this kind. Personally, I am thoroughly convinced that she is a carrier. Just how to account for the fact that no other outbreaks have occurred is a rather difficult problem. I am sending you a reprint of an article on typhoid carriers in which you will find reported cases in which this very thing has occurred.

If further examinations prove that Mrs. Julian is a carrier it will be necessary to take some steps to prevent her being a source of danger to others. There is no law that provides for the quarantine of such a person, and indeed such a law would be very unadvisable at present. But such carriers should be instructed in certain matters, which if carried out, will prevent their being a source of danger to those associated with them. Mrs. Julian should have her condition explained to her and the utmost cleanliness on her part should be urged. Being a good housewife, as she doubtless is, she will probably resent being told that she must be scrupulously clean, for she doubtless thinks that she is already so. This can be very easily gotten around by explaining to her the difference between social cleanliness and bacteriological cleanliness. She should be told how a surgeon would clean his nails in a way that could not be censured by the most scrupulous person in high society and yet if he were to open a peritoneal cavity of a patient, could give that patient a fatal peritonitis. Such an explanation, tactfully given, will I am sure, not offend Mrs. Julian. She should also be warned of the danger to her family which attaches to her handling milk and butter and such foods as are eaten raw, as salads, etc. She should also be especially careful in the disposition of her bowel discharges.

I have a culture from the stool of Ray Whyde which resembles a typhoid bacillus rather closely, but I am not yet ready to pronounce it such. To pick out one or more of a few typhoid bacilli among the myriads of other bacteria in the stools is no easy task. One culture from Ray Whyde was taken on about the twelfth day of the disease. This is a little early for the appearance of typhoid bacilli in large numbers in the stools. They do not appear very numerous until the third week of the disease, when ulceration is in full headway. I hope you will send us another culture from the stools of both these people.

Yours very truly,

J. P. SIMONDS, Superintendent.

Typhoid bacilli were isolated from the stool of a second suspected carrier, the specimen having been sent by Dr. J. W. Phares, of Howell, Ind. It was impossible to obtain any information concerning this case from Dr. Phares.

Two cultures from workers in a dairy in Michigan City did not show typhoid bacilli. The local health officers believed an epidemic of typhoid fever in the city had been traced to the milk furnished by this dairy.

ANTITYPHOID VACCINATION.

As recorded in the last annual report, this Laboratory furnishes antityphoid vaccine to physicians free of charge. The demand has not been as great as was expected, but nearly three hundred people in various parts of the State have availed themselves of immunization by this means. Dr. Shimer has analyzed and tabulated the information furnished on the return blanks.

With each dose of vaccine there is sent the accompanying clinical history blank, on which is to be recorded the symptoms resulting from the injection. Succeeding doses of vaccine are not sent for a given patient until the blank for the previous injection has been returned. With the first dose of the vaccine there are sent specific directions for using it and a statement of facts concerning the effects and value of antityphoid vaccination. Copies of these sheets are submitted herewith.

CLINICAL RECORD OF ANTITYPHOID VACCINATION.

(This sheet must be filled out and returned before other doses will be forwarded.)

Physician's name.............................. Address.................
Patient's name................................ Age....... Sex..........
Dose No............ Date of injection.................... Hour........
Local reaction...
Redness?................. Size of area?..........
Swelling?.................. Size of area?..........
Tenderness? ....
Pain?............................... Character?..................
Location of pain?...
Time after injection when local reaction reached its greatest severity ....
Axillary glands: Tenderness?............... Swelling?...............
General Reaction...
Malaise?........................... Duration?................
Diarrhea?.......................... Nausea?..................
Chills?............................ Herpes?..................
Headache? ....
Temperature........ Pulse........
At time of injection..........................
6 hours after injection..........................
12 hours after injection..........................
18 hours after injection..........................
24 hours after injection..........................
36 hours after injection..........................
48 hours after injection..........................

DIRECTIONS FOR USING ANTITYPHOID VACCINE.

1. Each ampule contains one dose of antityphoid vaccine.
2. Shake all the contents of the ampule into the bulb. Break off the neck of the ampule near the bulb and draw the vaccine into a sterile hypodermic syringe. Inject into the outer side of the arm above the elbow after cleansing with alcohol.
3. Fill out the enclosed blank in every detail and mail to Superintendent Bacteriological Laboratory, Indiana State Board of Health, 122

State House. Other doses will NOT be sent until the blank has been returned properly filled out. Other doses will be sent at the proper time without further request when these conditions are complied with.

FACTS ABOUT ANTITYPHOID VACCINATION.

1. The material injected is a VACCINE and not a SERUM. It has no curative effect. It is NOT to be given to a patient who is actually suffering from typhoid fever in any stage of the disease. The object of the injection is to stimulate the body to the production of antibodies which will protect the patient against possible infections in the future.

2. The vaccine is prepared by suspending an 18-hour agar slant growth of typhoid bacilli in 20 cc. of sterile salt solution and heating for 2 hours at 60°C. One cc. of this heated suspension contains approximately 500,000,000 dead bacilli and forms one dose.

3. The reaction following the injection varies in different individuals The results of several thousand injections in the United States Army were as follows:

	REACTION.			
	Absent.	*Mild.*	*Moderate.*	*Severe.*
First dose	62.7 %	32.0 %	4.5 %	0.7 %
Second dose	68.6 %	25.8 %	5.0 %	0.6 %
Third dose	79.0 %	16.7 %	4.1 %	0.2 %

A mild reaction resembles the onset of a cold from which the patient quickly recovers. A severe reaction may be accompanied by fever, chills, herpes, nausea, vomiting and diarrhea. This need cause no alarm for the symptoms begin to subside in a few hours and, as a rule, have entirely disappeared in two days. At the site of injection there may be redness and tenderness, which is rarely troublesome and disappears in 48 to 72 hours.

4. The results of antityphoid vaccination in protecting against typhoid fever have been very gratifying. In the English Army the total number of cases of typhoid fever among vaccinated soldiers was less than the number of deaths among a like number of unvaccinated men placed under similar conditions. The occurrence of only one case of typhoid among 12,000 vaccinated soldiers stationed in Texas in 1911 contrasts favorably with the record of the United States Army in the Spanish-American War, when one-fifth of all the men suffered from the disease and 1,580 of them died. Certain persons engaged in civil occupations, such as nurses, physicians, laboratory workers and traveling men, are especially liable to contract typhoid fever and need the protection afforded by antityphoid vaccination. The immunity produced by the injections is known to last at least three years. When a person previously vaccinated does take typhoid fever the attack is invariably very mild.

The results of 119 first, 66 second and 74 third injections have been tabulated. It will be seen that the local and general reactions in the vest majority of the cases were either absent or very mild.

In making the vaccine two strains of typhoid bacilli are used.

The first dose contains 500,000,000 of the first, the second dose 500,000,000 of the second strain, the third dose 500,000,000 of each of the two strains.

The bacilli are grown on plain agar slants for eighteen hours at 37.5°C. The growth is then washed off and suspended in sterile physiological salt solution. The proper dilution is made and the suspension thoroughly shaken in a Rickards' sputum shaker for half an hour. The suspension is put into 1 cc. glass ampules, sealed and sterilized in a water bath at from 58-60°C. for one hour. The vaccine is tested for sterility by planting some of the vaccine in broth and on plain agar slants. If there is no growth the vaccine is ready to send out.

The effects of the injections are shown in tabular form in Tables 3 to 12.

TABLE 3.

Showing the Number of Cases Showing Redness at the Site of Injection of Antityphoid Vaccine.

DIAMETER OF AREA.	REDNESS AT POINT OF INJECTION.		
	First Injection.	Second Injection.	Third Injection.
Two inches	32	35	42
Four inches	41	6	11
Six inches	14	2	5
No reaction	32	23	16

After first injection 27% showed no redness.
After second injection 34% showed no redness.
After third injection 21% showed no redness.

TABLE 4.

Number of Cases Showing Swelling at Site of Injection of Antityphoid Vaccine.

DIAMETER OF AREA.	SWELLING AT POINT OF INJECTION.		
	First Injection.	Second Injection.	Third Injection.
Two inches	41	25	45
Four inches	34	6	9
Six inches	1	2	5
No reaction	43	33	15

After first injection, 36% showed no swelling.
After second injection, 50% showed no swelling.
After third injection, 20% showed no swelling.

TABLE 5.

Showing Number of Cases with Pain at Site of Injection of Antityphoid Vaccine.

	PAIN AT POINT OF INJECTION.		
	First Injection.	Second Injection.	Third Injection.
Slight	33	9	35
Marked	28	12	15
Absent	68	45	24

First injection, 57% had no pain at point of injection.
Second injection, 68% had no pain at point of injection.
Third injection, 32% had no pain at point of injection.

TABLE 6.

Showing Time After Injection of Antityphoid Vaccine at which Local Reaction was Greatest.

	TIME AT WHICH LOCAL REACTION WAS GREATEST.		
	First Injection.	Second Injection.	Third Injection.
Sixth hour	25	11	22
Twelfth hour	18	8	8
Eighteenth hour	6	2	2
Twentyfourth hour	16	12	12
No reaction	54	33	30

TABLE 7.

Number of Cases Showing Tenderness and Swelling of Axillary Glands after Injection of Antityphoid Vaccine.

	AXILLARY GLANDS.			
	Tenderness.		Swelling.	
	Present.	Absent.	Present.	Absent.
First injection	19	100	19	100
Second injection	7	59	7	59
Third injection	10	64	7	65

First injection, tenderness and swelling axillary gland absent 84%.
Second injection, tenderness and swelling axillary gland absent 89%.
Third injection, tenderness and swelling axillary gland absent 86%.

TABLE 8.

Number of Cases Showing Malaise after Injection of Antityphoid Vaccine.

	MALAISE.				
	Sixth Hour.	Twelfth Hour.	Eighteenth Hour.	Twenty-fourth Hour.	None.
First injection	21	4	0	26	68
Second injection	5	2	0	9	50
Third injection	23	6	1	16	28

First injection, 57% had no malaise.
Second injection, 75% had no malaise.
Third injection, 37% had no malaise.

TABLE 9.

Number of Cases Showing Diarrhea, Chills, Headache, Nausea and Herpes after Injection of Antityphoid Vaccine.

GENERAL REACTION.	Diarrhea.			Chills.			Headache.			Nausea.			Herpes.		
	Injections.			Injections.			Injections.			Injections.			Injections.		
	1st.	2d.	3d.	1st.	2d.	3d.	1st.	2d.	3d.	1st.	2d.	3d.	1st.	2d.	3d.
Absent..........................	116	60	72	100	60	68	68	47	50	99	60	61	119	66	72
Present..........................	3	6	2	19	6	6	51	19	24	20	6	13	0	0	2

First injection, 97% had no diarrhea.
Second injection, 90% had no diarrhea.
Third injection, 97% had no diarrhea.
First injection, 84% had no chills.
Second injection, 90% had no chills.
Third injection, 99% had no chills.
First injection, 57% had no headache.
Second injection, 70 % had no headache.
Third injection, 67% had no headache.
First injection, 80% had no nausea.
Second injection 90% had no nausea.
Third injection, 80% had no nausea.
First injection, 100% had no herpes.
Second injection, 100% had no herpes.
Third injection, 99% had no herpes.

TABLE 10.

Showing Temperature Reactions following Injections of Antityphoid Vaccine.

TEMPERATURE.	Sixth Hour.			Twelfth Hour.			Eighteenth Hour.			Twenty-fourth Hr.		
	Injections.			Injections.			Injections.			Injections.		
	1st.	2d.	31.	1st.	2d.	3d.	1st.	2d.	3d.	1st.	2d.	3d.
102° F............	......	......	0	0	0	0	0	0	0	0	0	0
101° F............	0	1	0	4	1	0	3	0	0	1	0	0
100° F............	3	0	0	5	2	0	5	3	0	5	0	0
99° F............	20	8	6	17	7	12	21	14	15	29	17	15
98.6° F..........	89	47	53	89	40	56	79	38	52	51	44	51
97.6° F..........	7	10	15	4	16	6	11	11	7	12	5	8

First injection, 6th hour 76% temperatures were normal.
First injection, 12th hour 76% temperatures were normal.
First injection, 18th hour 66% temperatures were normal.
First injection, 24th hour 60% temperatures were normal.
Second injection, 6th hour 70% temperatures were normal.
Second injection, 12th hour 60% temperatures were normal.
Second injection, 18th hour 57% temperatures were normal.
Second injection, 24th hour 66% temperatures were normal.
Third injection, 6th hour 71% temperatures were normal.
Third injection, 12th hour 75% temperatures were normal.
Third injection, 18th hour 70% temperatures were normal.
Third injection, 24th hour 68% temperatures were normal.

TABLE 11.

Showing Effect of Antityphoid Vaccine on the Pulse Rate.

PULSE RATE PER MINUTE.	60 Beats.			72 Beats.			80 Beats.			90 Beats.		
	Injection.			Injection.			Injection.			Injection.		
	1st.	2d.	3d.	1st.	2d.	3d.	1st.	2d.	3d.	1st.	2d.	3d.
Sixth hour..........	5	6	5	66	36	34	26	13	35	22	11	0
Twelfth hour........	3	6	1	69	34	44	29	11	29	18	15	0
Eighteenth hour.....	5	0	3	46	39	49	12	6	22	15	21	0
Twenty-fourth hour.	8	11	0	101	25	50	5	12	24	5	28	0

First injection, 6th hour 55% normal pulse.
First injection, 12th hour 58% normal pulse.
First injection, 18th hour 73% normal pulse.
First injection, 24th hour 84% normal pulse.
Second injection, 6th hour 54% normal pulse.
Second injection, 12th hour 51% normal pulse.
Second injection, 18th hour 59% normal pulse.
Second injection, 24th hour 37% normal pulse.
Third injection, 6th hour 45% normal pulse.
Third injection, 12th hour 60% normal pulse.
Third injection, 18th hour 66% normal pulse.
Third injection, 24th hour 66% normal pulse.

It is evident from the above tables that the reactions following the injections of antityphoid vaccine furnished by the Laboratory have been very mild in the vast majority of cases. The discomfort following these injections is so slight that fear of it need not deter anyone from securing the immunity which these injections produce.

TUBERCULOSIS.

A total of 4,688 specimens of sputum were examined, and 1,151, or 24 per cent., were found to contain tubercle bacilli. The method of digestion with antiformin and centrifugation of sputum is still being used with satisfaction. It is only when specially requested by physicians that a smear from the unchanged sputum is examined. The number of specimens of sputum received each month is shown in Table 12.

TABLE 12.

Showing Number of Specimens of Sputum Examined Each Month.

Month.	Positive.	Negative.	Total.
October	114	222	336
November	86	232	318
December	70	282	352
January	91	290	381
February	76	295	371
March	92	367	459
April	93	369	462
May	122	374	496
June	114	301	415
July	113	294	407
August	100	265	365
September	80	246	326
Totals	1,151	3,537	4,688

The number of specimens of sputum received from each county is shown in Table 13.

TABLE 13.

Showing the Number of Specimens of Sputum Received from Each County.

Counties.	Positive.	Negative.	Total.	Counties.	Positive.	Negative.	Total.
Adams	10	29	39	Lawrence	20	38	58
Allen	1	21	22	Madison	42	129	171
Bartholomew	8	32	40	Marion	145	497	642
Benton	8	19	27	Marshall	15	43	58
Blackford	7	42	49	Martin	2	17	19
Boone	20	51	71	Miami	12	43	55
Brown	....	....	....	Monroe	2	7	9
Carroll	8	16	24	Montgomery	16	78	94
Cass	10	49	59	Morgan	14	30	44
Clark	8	15	23	Newton	....	8	8
Clay	12	43	55	Noble	13	28	41
Clinton	8	24	32	Ohio	....	3	3
Crawford	3	3	6	Orange	7	21	28
Daviess	17	52	69	Owen	4	10	14
Dearborn	11	27	38	Parke	4	14	18
Decatur	4	27	31	Perry	3	6	9
Dekalb	7	46	53	Pike	3	21	24
Delaware	23	87	110	Porter	3	23	26
Dubois	7	13	20	Posey	6	15	21
Elkhart	26	102	128	Pulaski	6	13	19
Fayette	5	25	30	Putnam	2	17	19
Floyd	32	43	75	Randolph	9	34	43
Fountain	12	31	43	Ripley	4	12	16
Franklin	1	8	9	Rush	17	51	68
Fulton	2	24	26	Scott	2	13	15
Gibson	10	32	42	Shelby	11	15	26
Grant	21	65	86	Spencer	20	41	61
Greene	14	61	75	Starke	2	17	19
Hamilton	16	50	66	Steuben	6	13	19
Hancock	12	41	53	St. Joseph	72	182	254
Harrison	7	19	26	Sullivan	7	21	28
Hendricks	15	47	63	Switzerland	2	3	5
Henry	21	39	60	Tippecanoe	11	47	58
Howard	17	49	66	Tipton	7	25	32
Huntington	13	57	70	Union	4	2	6
Jackson	9	41	50	Vanderburgh	38	83	121
Jasper	6	13	19	Vermillion	6	32	38
Jay	10	22	32	Vigo	32	91	123
Jefferson	14	26	40	Wabash	10	39	49
Jennings	7	9	16	Warren	3	12	15
Johnson	3	32	35	Warrick	2	4	6
Knox	19	36	55	Washington	5	4	9
Kosciusko	4	44	48	Wayne	22	76	98
Lagrange	16	36	52	Wells	5	16	21
Lake	21	39	60	White	16	20	36
Laporte	1	19	20	Whitley	3	18	21
Totals	506	1,606	2,113	Totals	635	1,938	2,567

The death rate from pulmonary tuberculosis as compared with that of other infectious diseases, varies but little from month to month, being highest in March and April, and lowest in September and October. The average number of specimens of sputum and the percentage of such specimens found to contain tubercle bacilli varies very definitely from month to month throughout the year. The number of specimens of sputum examined each month and the monthly average for the five-year period of 1908 to 1912 are shown in Table 14. The per cent. of specimens found to contain tubercle bacilli each month and the monthly average per cent. for the same five-year period are shown in Table 15. These facts are shown graphically in Chart 1.

TABLE 14.

Showing Number of Specimens of Sputum Examined Each Month and the Monthly Average for the Five-Year Period from 1908 to 1912.

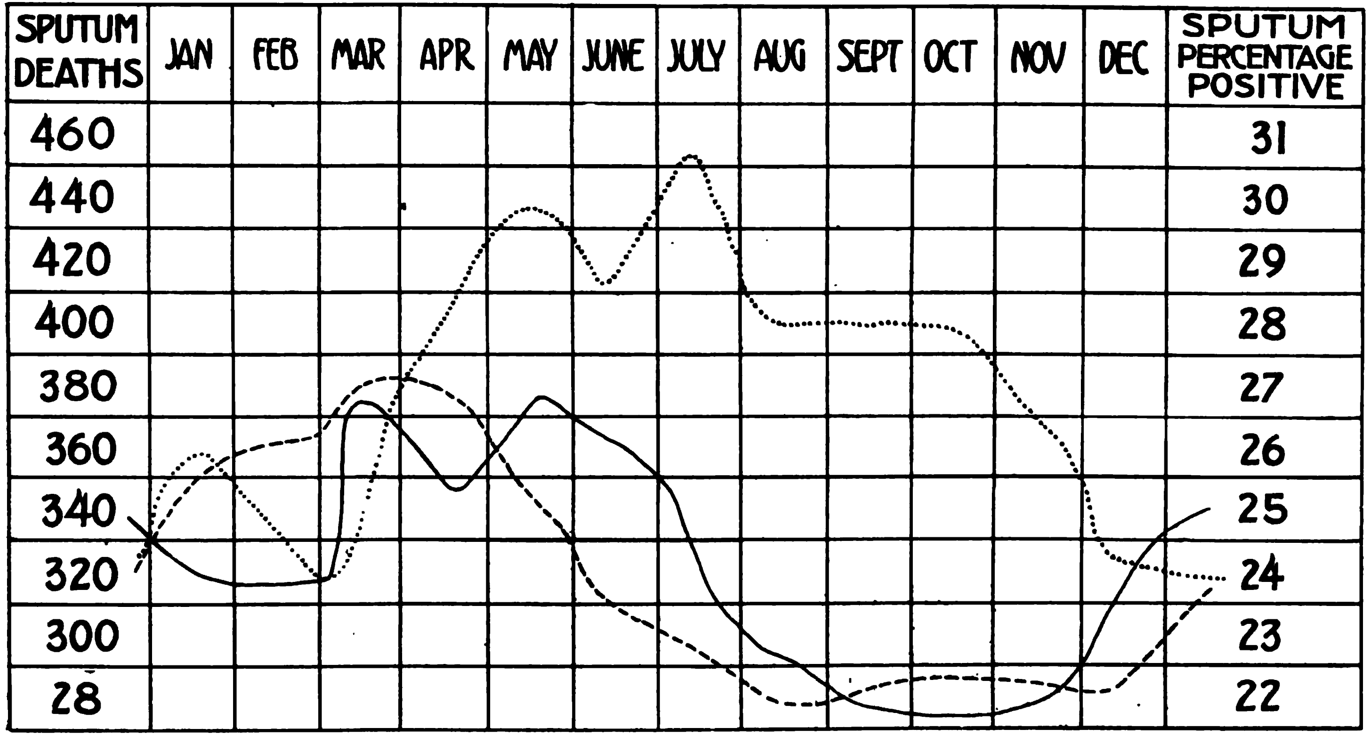
MONTH.	1908.	1909.	1910.	1911.	1912.	AVERAGE.
January..........	246	276	273	437	387	324
February.........	208	268	329	435	371	322
March............	292	374	458	368	467	392
April............	292	315	351	354	462	355
May..............	308	291	379	391	496	373
June.............	308	297	363	378	415	352
July.............	321	302	283	255	404	313
August...........	264	270	325	274	365	300
September........	284	273	271	288	327	289
October..........	252	295	312	336	....	299
November.........	222	290	353	318	....	296
December.........	275	261	383	459	....	345
Monthly Average..	273	293	340	358	410	....

TABLE 15.

Showing Per Cent. of Sputa Containing Tubercle Bacilli Each Month and the Monthly Average Per Cent. for the Five-Year Period, 1908 to 1012.

MONTH.	PER CENT. CONTAINING TUBERCLE BACILLI IN					Average. Per Cent.
	1908.	1909.	1910.	1911.	1912.	
January..........................	25	33	26	23	25	26
February.........................	29	21	25	28	21	25
March............................	28	20	23	30	20	24
April............................	26	23	32	35	20	27
May..............................	28	25	30	40	25	30
June.............................	27	25	31	35	27	29
July.............................	34	33	33	26	28	31
August...........................	30	26	35	26	27	29
September........................	29	28	35	27	24	29
October..........................	29	29	26	34	....	29
November.........................	30	28	21	27	....	27
December.........................	26	30	23	15	....	24
Average for year.................	28	26.7	28	28.8	24	....

CHART 1.



Heavy line shows average actual number of sputums specimens received in five years.
Dotted line shows average percentage sputums positive for five years.
Barred line shows average deaths for nine year of pulmonary tuberculosis.

From the chart it is seen that the curve of deaths from pulmonary tuberculosis and that of the number of specimens of sputum examined each month run almost parallel to each other. Both are highest in the early spring and lowest in the late summer and early autumn. The curve showing the per cent. of sputa containing tubercle bacilli has its maxima and minima opposite those of the two former curves. The lowest percentage of sputa are found positive in February and March and the highest in July and August. This is easily explained. In the winter and spring months coughs and colds are more common than at other times of the year, hence the majority of specimens of sputum are from cases of non-tuberculous catarrhal conditions. In the summer and early fall colds are not common and the existence of a cough is likely to have a much more serious meaning.

During the last two years facts concerning the relation of exposure to the development of tuberculosis have been tabulated and presented in the reports of this Laboratory for 1910 and 1911. These figures and those for eleven months of the fiscal year 1912 are given in Tables 16 and 17.

TABLE 16.

Showing the Influence of Association with Tuberculous Persons on the Development of Tuberculosis.

EXTENT OF EXPOSURE.	Total.	Per Cent.
Tuberculosis in patient's family	1,251	37%
Tuberculosis in patient's associates	225	6%
No known source of infection	1,904	57%
Totals	3,380	100%

TABLE 17.

Showing the Relation of Other Tuberculous Members o ;the Family to the Patient.

Member of family having Tuberculosis.	Member of family contracting Tuberculosis.	Number Cases.	Per Cent.
Father	Son	63	50%
	Daughter	64	50%
Mother	Son	89	34%
	Daughter	170	66%
Brother	Brother	100	56%
	Sister	77	44%
Sister	Brother	77	34%
	Sister	150	66%

Table 16, based on 3,380 positive cases, shows the danger of the careless consumptive to the community. In 57 per cent. of the cases there was no history of tuberculosis in the patient's family and no known association with tuberculous persons.

Table 17, by its larger number of cases, emphasizes the conclusions stated in the report for 1910, namely, that when the father has tuberculosis the son and daughter have about equal chances of contracting the disease, but when the mother is consumptive the chances of the daughter's becoming tuberculous are about twice as great as the son's. The reason for this is plain. The father's relations with his children are nothing like so intimate as the mother's; nor is the son so closely associated with his mother as is the daughter. The closer association of the latter is, furthermore, usually indoors where ventilation is often none too good and conditions are more favorable to the transference of infection. When a brother has tuberculosis the chances of another brother's taking the disease are slightly larger than a sister's. But when a sister is tuberculous the chances of another sister's becoming so are nearly double a brother's. This variation is likewise explained by differences in the intimacy of association. The chances of the husband's taking the disease from his tuberculous wife are equal to the chances of the healthy wife taking it from her tuberculous husband.

DIPHTHERIA.

Diphtheria was unusually prevalent throughout the State during the first three months covered by this report, namely, October, November and December, 1911. A large number of cities were affected. In Greensburg the disease suddenly became so widespread that the taking of cultures by wholesale throughout the schools in search for carriers became necessary in order to stamp out the epidemic.

The total number of throat cultures examined for diphtheria bacilli was 9,326. Of these 1,768, or 20 per cent., were positive. The number of throat cultures received by months is shown in Table 18. The number of cultures from each county is shown in Table 19.

TABLE 18.

Showing Number of Throat Cultures Examined, by Months.

MONTH.	Suspicious.					
	Positive.	Negative.	Second Culture Requested.	No Growth.	Unsatisfactory.	Totals.
October..........................	773	2,490	490	45	3	3,801
November........................	520	1,985	122	21	2	2,650
December........................	159	995	39	....	10	1,203
January..........................	37	190	18	2	....	247
February.........................	31	173	26	7	....	237
March............................	17	150	23	1	1	192
April.............................	29	109	32	....	1	171
May...............................	24	87	4	....	2	117
June..............................	13	81	3	....	....	107
July...............................	17	70	7	....	....	94
August...........................	22	96	....	....	....	118
September.......................	126	222	37	2	2	389
Totals..........................	1,768	6,578	801	78	19	9,326

TABLE 19.

Showing Number of Throat Cultures Examined, by Counties.

COUNTIES.	Positive.	Negative.	Total.	COUNTIES.	Positive.	Negative.	Total.
Adams...........	....	1	1	Lawrence.........	22	4	26
Allen............	1	....	1	Madison..........	71	129	200
Bartholomew.....	12	24	36	Marion...........	88	246	334
Benton...........	....	5	5	Marshall.........	26	46	72
Blackford........	1	7	8	Martin...........	5	9	14
Boone...........	1	6	7	Miami...........	10	36	46
Brown...........	....	....	....	Monroe..........	52	175	227
Carroll..........	1	11	12	Montgomery......	51	94	145
Cass.............	13	51	64	Morgan..........	10	19	29
Clark............	28	19	47	Newton..........	2	7	9
Clay.............	75	75	150	Noble...........	3	9	12
Clinton..........	5	31	36	Ohio............	....	....	....
Crawford.........	19	4	23	Orange..........	17	12	29
Daviess..........	1	13	14	Owen............	3	1	4
Dearborn.........	6	11	17	Parke............	12	9	21
Decatur..........	109	281	390	Perry............	....	2	2
Dekalb...........	19	22	41	Pike.............	7	40	47
Delaware.........	19	52	71	Porter...........	7	38	45
Dubois...........	4	11	15	Posey...........	1	3	4
Elkhart..........	26	60	86	Pulaski..........	4	5	9
Fayette..........	3	11	14	Putnam..........	59	115	174
Floyd............	10	18	28	Randolph........	2	4	6
Fountain.........	4	20	24	Rinley...........	9	7	16
Franklin.........	1	4	5	Rush............	2	14	16
Fulton...........	2	4	6	Scott............	....	2	2
Gibson...........	1	7	8	Shelby...........	....	13	13
Grant............	13	31	44	Spencer.........	49	53	102
Greene...........	21	26	47	Starke...........	....	....	....
Hamilton.........	3	19	22	Steuben.........	....	3	3
Hancock..........	30	45	75	St. Joseph........	82	70	152
Harrison.........	3	5	8	Sullivan.........	18	18	36
Hendricks........	30	67	97	Switzerland.......	....	1	1
Henry............	58	97	155	Tippecanoe.......	3	7	10
Howard...........	11	25	36	Tipton...........	2	4	6
Huntington.......	3	11	14	Union............	....	2	2
Jackson..........	9	43	52	Vanderburgh......	9	11	20
Jasper...........	3	3	6	Vermillion.......	37	42	79
Jay..............	3	6	9	Vigo.............	107	95	202
Jefferson.........	22	27	49	Wabash..........	19	46	65
Jennings.........	3	2	5	Warren..........	....	8	8
Johnson..........	1	14	15	Warrick..........	2	2	4
Knox.............	21	18	39	Washington.......	1	12	13
Koscuisko........	7	14	21	Wayne...........	30	110	140
Lagrange.........	....	7	7	Wells............	....	....	....
Lake.............	21	27	48	White............	....	2	2
Laporte..........	1	7	8	Whitley..........	....	2	2
Totals........	624	1,342	1,766	Totals........	822	1,457	2,349

In each of the last three annual reports of this Laboratory the results of the tabulation of certain facts furnished with throat cultures have been given. The same tabulations have been made of similar facts received during the first eleven months of 1912. Instead of giving the figures for a single year only, a summary will be made of all the facts accumulated during the past three years.

It has been contended by this department that, in Indiana at least, school attendance is a very definite and important factor in the prevalence of diphtheria. The patients from whose throats 1,213 positive first cultures were obtained are classified according to age and sex in Table 20.

TABLE 20.

Showing the Age and Sex of 1,213 Patients from whom Positive First Cultures were Obtained.

Age.	Males.	Females.	Totals.	Per Cent.
Up to 5 years	106	121	227	19
6 to 14 years	346	347	693	57
15 to 20 years	61	79	140	11
21 to 40 years	61	92	153	13
Total	574	639	1,213	100

From this table it is seen that 57 per cent. of these patients were in the school age of 6 to 14. It is not at all impossible that many of those under and over this age had the disease brought to them by members of the family who were in school. There can be no doubt, therefore, that proper medical supervision of school children will do much to reduce the morbidity of diphtheria in Indiana.

The necessity of Laboratory examinations of throat cultures as a means of controlling quarantine has also been emphasized. In Tables 21 and 22 a correlation is made between clinical and bacteriologic diagnoses in 4,342 first-culture cases.

TABLE 21.

Showing the Bacteriologic Diagnosis in 4,342 First Cultures, in which the Clinical Diagnosis was Stated.

CLINICAL DIAGNOSIS.	Bacteriologic Diagnosis.		Totals.
	Positive.	Negative.	
Diptheria	510	455	965
Not Diptheria	314	1,460	1,774
Doubtful	395	1,208	1,603
Totals	1,219	3,123	4,342

TABLE 22.

Showing the Per Centage Relation of Bacteriologic to Clinical Diagnosis.

CLINICAL DIAGNOSIS.	Total No. Cases.	BACTERIOLOGIC DIAGNOSIS.	
		Per Cent. Positive.	Per Cent. Negative.
Diptheria	965	53	47
Not Diptheria	1,774	18	82
Doubtful	1,603	24	76
Total	4,342		

From these tables it is seen that the cases diagnosed clinical diphtheria only 53 per cent. gave positive bacteriologic tests; of those diagnosed "tonsilitis," "sore throat," etc., 18 per cent. gave positive results; while of those in which the clinical diagnosis was doubtful, 24 per cent. were positive. Making due allowance for the fallibility of bacteriologic diagnosis, it is evident from the above tables that clinical symptoms do not furnish a satisfactory basis for the control of quarantine. While bacteriologic diagnosis is not absolutely infallible, the percentage of error is probably not greater than 5 per cent. in a well-managed laboratory. That was approximately the percentage of error found in a series of cases studied in the Boston City Laboratory. Furthermore, it must be remembered that a bacteriologic diagnosis of diphtheria does not mean that the patient is actually suffering from the disease; it does mean that he is harboring diphtheria bacilli in his throat and is a menace to the public. These diphtheria bacilli carriers cannot be recognized by clinical means.

TABLE 23.

Showing the Relation of Membrane or Exudate to Bacteriologic Findings.

MEMBRANE OR EXUDATE.	BACTERIOLOGICAL DIAGNOSIS.		Totals.	Per Cent. Positive.
	Positive.	Negative.		
Present	976	1,924	2,900	34
Absent	152	834	986	16
Totals	1,128	2,758	3,886	29

That the mere presence or absence of a membrane or exudate in the throat is not a true indication of the danger of the patient to the public is shown in Table 23, based on 3,886 first cultures. Of 986 patients with no membrane or exudate, 16 per cent. had diphtheria bacilli in their throats.

The work of these healthy carriers is shown in Table 24, in which 38 per cent. of 1,472 patients knew of no actual exposure to the disease. In these cases there were no known clinical cases of diphtheria in the community in which the patient lived.

TABLE 24.

Showing Relation of Exposure to Subsequent Development of Diphtheria.

	Bacteriologic Diagnosis Positive.	Per Cent.
Patient known to have been exposed	324	22
Diphtheria in community, but patient not known to have been exposed	552	40
Patient not known to have been exposed	596	38

TESTS FOR VIRULENCE.

It has been gratifying to note that many health officers are conscientiously attempting to control quarantine by means of subsequent cultures. In only one or two instances were guinea pig tests requested to determine the virulence of the diphtheria bacilli which persisted in the throat. The following cases in which such tests were made may be cited:

On October 24, 1911, a culture from the throat of Glen Gall was sent to the Laboratory by Dr. Walter H. Baker, of South Bend, and found to contain diphtheria bacilli. Four members of the Gall family were infected and cultures from their throats showed the following results:

1. CASE OF GLEN GALL, AGE 14.

Date of First Symptoms, October 21, 1911.

Date of Taking Culture.	Result.	Days Since First Symptoms.
October 24, 1911	Positive	3
October 29, 1911	Positive	8
November 2, 1911	Positive	12
November 8, 1911	Positive	18
November 12, 1911	Positive	22
November 15, 1911	Negative	25

2. CASE OF DE VOR GALL, AGE 18.

Date of First Symptoms, October 21, 1911.

Date of Taking Culture.	Result.	Days Since First Symptoms.
October 29, 1911	Positive	8
November 2, 1911	Positive	12
November 8, 1911	Negative	18

3. CASE OF MRS. GEORGE GALL, AGE 40.

Date of First Symptoms, October 20, 1911.

Date of Taking Culture.	Result.	Days Since First Symptoms.
November 2, 1911	Positive	13
November 8, 1911	Positive	19
November 12, 1911	Positive	23
November 15, 1911	Positive	26
November 21, 1911	Positive	32
November 29, 1911	Positive	40
December 3, 1911	Negative	44

4. CASE OF DALE GALL, AGE 16.

Date of First Symptoms, October 22, 1911.

Date of Taking Culture.	Result.	Days Since First Symptoms.
October 29, 1911	Positive	7
November 2, 1911	Positive	10
November 8, 1911	Positive	16
November 12, 1911	Positive	20
November 15, 1911	Positive	23
November 21, 1911	Positive	29
November 24, 1911	Positive	32
November 29, 1911	Positive	37
December 3, 1911	Positive	41
December 6, 1911	Positive	44
December 9, 1911	Negative	47

Here were four patients in whose throats diphtheria bacilli persisted for eighteen, twenty-five, forty-four and forty-seven days respectively. At the request of Dr.Baker diphtheria bacilli were isolated in pure culture from speeimens sent on November 29 and again on December 2. A standard dose of a broth culture of these organisms killed guinea pigs in less than the standard time. That is, an amount of a forty-eight-hour broth culture equivalent to 0.5 per cent. of the guinea pig's weight caused the death of the animal in less than seventy-two hours. The fermentative, morphologic and toxin-producing properties of these organisms are shown in Table 25.

TABLE 25.

Fermentative, Morphologic and Toxine Producing Properties of Diphtheria-Like Organisms Isolated from Cultures Taken in the Bloomington Epidemic.

Designation.	Acid in Dextrose Litmus Broth.			Acid Produced in Dextrose Broth. eventy-two Hours. Phenolphthalein.	Types, Wesbrook.	Guinea Pig Test.	Clinical Course.
	Twenty-four Hours.	Forty-eight Hours.	Seventy-two Hours.				
Se 26				None	E 2		School case; no information.
H 46				1.2% acid	E 2		School case; no information.
Si 3				None	C 2		School case; no information.
36 A2				None	E 2		School case; no information.
36 B3				None	C 2		School case; no information.
55 B3				1.17% acid	E 2		Membrane present clinically D.
111 A3					C 2, E 2		School case; no information.
M 25				None	C 2, E 2		School case; no information.
Cl 29				1.64% acid	C 2, E 2		School case; no information.
Cl 7				1.28% acid	A D		School case; no information.
Ha 22				0.71% acid	C 2, E 2		School case; no information.
1 A				0.16% acid	A A C	Died on ninth day	School case; no information.
4 B				1.26% acid	A E 2	Died on ninth day	School case; no information.
2 A				None	A D	Died on fifth day	School case; no information.
2 C				None	A D	Died on twelfth day	School case; no information.
4 A				1.62% acid	A B D		School case; no information.
Se 14							School case; no information.

The throat cultures received from the Bloomington epidemic were very puzzling. About sixteen organisms were isolated in pure culture and studied by Mr. Clore. His report is as follows:

"The organisms were somewhat shorter and thicker than the usual type of diphtheria bacilli, and most of them stained solidly. The majority corresponded to Wesbrook's types C_2 and E_2, some to types A, A_1, B, C and D. The arrangement of the bacilli with reference to each other was characteristic of *B. diphtheriæ*. Many of the throat cultures, many of which were from healthy children, contained these C_2 and E_2 types in practically pure culture. Clinically the disease was mild and there were no deaths. The fermentative, morphologic and toxin-producing properties of sixteen cultures are shown in Table 26.

TABLE 26.

Showing Characteristics of Virulent Diphtheria Bacilli Isolated from Throats of Diphtheria Carriers.

Source of Culture.	Date of Isolation.	Day of Disease.	Acid in Dextrose Litmus Broth.			Per Cent. of Acid in Dextrose Broth. Seventy-two Hours. Phenolphthalein.	Types (Wesbrook).	Guinea Pig Test.
			Twenty-four Hours.	Forty-eight Hours.	Seventy-two Hours.			
Dale Gall	November 29, 1911	Thirty-first				1.74%	A D	Died in 20 hours.
1 Dale Gall	December 2, 1911	Thirty-fifth				1.46%	A D C	Died in 24 hours.
Mrs. Dale Gall	November 29, 1911	Twenty-seventh				1.54%	A C D	Died in 36 hours.

"Dextrose was fermented by some of the C_2 and E_2 types, as well as by the unquestioned types A and D. In no case did 0.5 per cent. of a guinea pig's body weight of a forty-eight-hour broth culture kill the animal in three days. Only three animals died—on the fifth, ninth and twelfth days respectively. In only one case was any information given concerning the clinical manifestations of the disease. The organism isolated from this culture was type E_2, and fermentated dextrose, but showed no virulence for guinea pigs.

"It would thus appear that in this epidemic there was present alongside an infection with frank diphtheria bacilli an infection with diphtheria-like organisms that possessed little or no virulence. It was exceedingly difficult, sometimes impossible, to accurately differentiate these two types of organisms in smears from cultures."

Cultures from Dry and Moist Swabs.

In order to determine the relative advantage of inoculating Loeffler's blood serum with dry swabs just as they are received in the mailing cases and inoculating after moistening the swabs with sterile salt solution, duplicate cultures were made from each of more than 500 swabs. Loeffler's blood serum which was entirely free from water of condensation was used. Each swab was removed from the mailing case and rubbed over the surface of the serum. It was then rubbed over the surface of a similar tube to which two or three drops of sterile salt solution had been added. The swab was first moistened with the salt solution and then rubbed over the surface of the medium.

This work was done by Dr. Ada E. Schweitzer, who furnishes this report.

There is frequently more or less liquefaction of the serum inoculated with throat cultures. In studying the relation of the use of dry and moist swabs to the occurrence of liquefaction all grades of liquefaction were taken into account.

TABLE 27.

Showing Influence of Dry and Moist Cultures on Liquefaction of Medium.

CULTURE.	Dry Cultures.		Moist Cultures.		Totals.
	Liquefaction.	No Liquefaction.	Liquefaction.	No Liquefaction.	
Positive cultures	33	104	72	65	274
Negative cultures	36	88	68	56	248
Totals	69	192	140	121	522

It would seem from Table 27 that liquefaction occurs more frequently in the moist cultures. The moist surface of the medium appears to favor the more rapid growth of liquefying bacteria.

The effect of the use of moist and dry cultures on the number of positive results obtained is shown in Table 28.

TABLE 28.

Showing Relative Number of Positive Results from Dry and Moist Cultures.

CULTURE.	POSITIVE.		NEGATIVE.		Totals.
	Dry.	Moist.	Dry.	Moist.	
Six hour cultures................	68	67	70	71	276
Twenty-four hour cultures.......	117	137	21	1	276

Both dry and moist cultures showed a marked increase in the number of positive results after twenty-four hours' growth over the number in 6-hour cultures. Thus of 276 cultures, 68 dry and 67 moist were positive after six hours, while 117 dry and 137 moist were positive after twenty-four hours' growth. Of 116 positive twenty-four-hour cultures on both dry and moist media, only 70 were positive when examined after six hours' growth. Of 21 cultures that were positive on moist and negative on dry media after twenty-four hours' growth, only 7 were positive in the six-hour cultures. Of 8 cultures positive on dry and negative on moist media when examined after six hours, only 1 was positive when examined after twenty-four hours. These were cultures which had become greatly overgrown with more vigorously growing bacteria. (See Table 29.)

TABLE 29.

Showing Relation of Positive and Negative Results from Dry and Moist Cultures.

CULTURE.	6-Hour Culture.	18 and 24-Hour Culture.
Dry + Moist+................................	70	116
Dry — Moist+................................	7	21
Dry + Moist—................................	8	1
Totals....................................	85	138

The addition of a few drops of sterile salt solution to media free from water of condensation would appear, therefore, to increase the number of positive results obtained from dry cultures made from the same swab. That is to say, greater accuracy is obtained from the use of moist cultures.

DIPHTHERIA EPIDEMICS.

During October and November, 1911, an epidemic of small proportions occurred at Greencastle, Putnam County. Between October 21 and November 8, 83 throat cultures were received from Dr. J. M. King, health officer at Greencastle. Of these, 11 were positive and 11 suspicious.

A case of diphtheria occurred in the school at Knightstown early in December, 1911. On December 16 Dr. E. B. Call, local health officer, sent 42 cultures to the Laboratory. All proved to be negative. No further cases developed.

On December 17 47 cultures were received from Dr. S. J. Young of Valparaiso. Of these 4 contained diphtheria bacilli. Thirty-six cultures were later received from Drs. Young and Nesbit, all of which were negative.

In October and November, 1911, an epidemic of diphtheria occurred in the school at Bridgeport, and was handled by Dr. W. L. Jennings, deputy health officer. On October 24 Dr. Jennings sent 17 cultures, 4 of which proved positive. On October 28 he sent 7 more cultures, all of which were negative; and on November 11 46 cultures, with 3 positive. The infection in this epidemic was quite virulent, there being two or three deaths.

During the course of the epidemic of diphtheria in Indianapolis we received a large number of cultures from children in schools just outside the city limits. These cases were managed by Dr. H. S. Mackey, county health commissioner, and Dr. J. W. Birchfield. Altogether 250 cultures were sent by these physicians. Of these 38 were positive and 21 suspicious.

Between October 19 and December 15, 1911, an epidemic of diphtheria held sway in Bloomington. A total of 1,692 cultures were examined for the Bloomington health authorities. Of these, 197 were positive and 24 suspicious. The peculiar difficulty in the bacteriologic diagnosis of these cases is discussed under the heading "Tests for Virulence."

The most extensive diphtheria epidemic occurred at Greens-during October and November, 1911. More than 3,000 throat cultures from Greensburg were examined at the Laboratory. Dr. Curtis Bland, formerly health officer of Greensburg, now of Colorado, has furnished the following report of the epidemic:

The epidemic of diphtheria which was present in Greensburg during the months of September and October, 1911, had its beginning in the south part of town July 1, 1911, when a boy three years old was taken down with the disease. No more was heard of the disease until August 31st, when another case was reported from the south part of the town. After this case another was reported September 6th, another September 8th, both in the same family and neighbors of the case reported August 31st. No more cases were reported until the 13th of September. This time from the east part of town. Ten cases were reported at this time from the State I. O. O. F. Home. During this time a few more cases were reported from the south part of town.

From September 11th to 16th, inclusive, the Eagles held a street carnival. How much this had to do with the disseminating of the disease I am unable to say. However, I believe it was a potent factor in distributing widely diphtheria bacilli. At any rate by the end of September, twenty-six cases had been reported. By proclamation of the mayor, public schools, Sunday schools, churches and all places of amusement were closed and all public meetings of any kind were prohibited. Two days later, September 29th, having been appointed city health officer, to fill a vacancy created by death, I took charge of the situation.

Our first duty was to search out the carriers of the disease and institute for them a quarantine practically as rigid as for those with clinical symptoms of the disease. We took cultures from the throats of all public school children up to and including the high school. This resulted in the following findings: Of the cultures taken September 30th from grades seven and eight, 32.3 per cent. came back positive; Cultures taken October 2d, from grades five and six, 32.7 per cent. came back positive; cultures taken October 3d, from grades three and four, 39.6 per cent. came back positive; cultures taken October 4th, from grades one and two, 36 per cent. came back positive; cultures taken October 5th, from the high school, 23.7 per cent. were positive; cultures taken October 6th, from pupils not previously examined, gave 35.8 per cent. positive. Out of a total of 872 cultures taken, 288, or 33 per cent., came back positive. This high percentage of carriers present among the school children and a large number of contacts under quarantine, together with the many more who would have been out of school, made us feel justified in keeping the schools closed, for the percentage of attendance would probably have been reduced to 50 per cent. or less.

All part of the town were found to be about equally infested with carriers, whereas previously the disease had been confined to the east and south sections of the town. No doubt the street carnival had served to distribute widely and well the diphtheria bacilli, for during the month of October cases were reported from all parts of the town quite regularly. The greatest report on any one day was seven.

As soon as positive reports were received the carriers were quarantined so that by the second week of October we had about 250 homes under quarantine, aggregating about 1,150 people. This quarantine was maintained by special police officers, who went about their respective wards from house to house seeing that quarantine was well observed. After a few arrests quarantine was well established. Of course dissatisfaction resulted among the ignorant, but the fight was vigorously continued. Ultimately, 260 homes were quarantined, containing about 1,200 persons, and this in a town of 6,000. Quarantine was maintained in each case until a negative report as to diphtheria bacilli was obtained from the State Bacteriological Laboratory. The house was then fumigated according to the regulations of the State Board of Health with potassium permanganate and formaldehyde. On the average, quarantine was maintained sixteen days, the shortest time being four days in the case of a suspicious carrier, the longest time seventy-five days. The last case was that of a girl ten years of age, who had the disease and had taken 28,000 units of antitoxin and in whose throat diphtheria bacilli persisted until it had been treated once or twice daily with pure tincture of iodine for almost a week.

Out of 400 carriers found during the epidemic only four developed clinical symptoms of the disease. Only three contacts develope the disease. However, a number of cases could be traced directly to an exposure to carriers, notably one, a woman who visited a home where two children were quarantined as carriers. In five days she developed a severe case of diphtheria.

Summary of cases of diphtheria by months: July 1st, one case; August, one case; September, twenty-six cases; October, forty-one cases; November three cases; December, one case. Total, seventy-three cases.

Two thousand cultures were taken and 400 carriers found. These carriers along with the contacts and clinical cases of the disease necessitated quarantining 260 homes or about 1,200 people.

Of the 73 cases of diphtheria, 34 were males and 39 females. Of this number 9 were under five years of age; 17 were between the ages of five and ten; 21 were between the ages ten and fifteen; 16 were between the ages of fifteen and twenty-one; 8 were over twenty-one. The youngest was three and the oldest seventy-six.

During the epidemic there were given 656,000 units of antitoxin to 192 different persons; 64 of the 73 clinical cases of diphtheria took it as a therapeutic measure; 128 persons took antitoxin as a prophylactic measure. The largest amount of antitoxin given to any one individual was 31,000 units. The immunizing dose was 1,000 units in all cases, except that of a child of two years was given 750 units. Of the 64 who used the antitoxin as a curative measure only 4 developed severe symptoms, which consisted in urticaria in from six to eight days after the injection of the antitoxin. In one of the cases urticaria was fleeting, lasting less than ten minutes. In another case there is some doubt as to the cause of the urticaria, while in the other two cases the antitoxin seemed to be the causative factor, and the urticaria was very annoying and persisted for three days in one case and four days in the other.

Of the 128 persons who used the antitoxin as an immunizing measure, 1 developed diphtheria thirty-one days later, another died from anaphylactic shock in less than thirty minutes after an immunizing dose of 1,000 units. This patient was a girl of nine years who had suffered most of her life from asthma.

Of the 64 patients on whom the antitoxin was used as a curative measure 3 developed post-diphtheretic paralysis to a greater or less degree, ranging from a slight paralysis, at times, of the muscles of the throat, to a paralysis involving not only the throat, but the arm and leg as well, also parts of the face and ocular muscles. Two of these cases are recovering slowly. All three were boys. The youngest has since died from pneumonia: perhaps his post-diphtheretic paralysis was a contributory cause of death, although he had been walking about for some weeks. These cases I feel sure would never have had any post-diphtheretic paralysis had the antitoxin been used early enough and in sufficient quantities. In saying this I am not criticizing the doctors, for they had much prejudice and ignorance to overcome and did the best they could under the circumstances.

The 73 clinical cases of diphtheria gave two deaths, or a mortality of 2.7 per cent. These two I feel sure could have been saved had the advice of the family physicians been followed and antitoxin used immediately and in sufficient quantity. One of these was a boy of four years with laryngeal diphtheria. The other was a boy of sixteen who died from paralysis of the heart. From the foregoing and other past experiences, I draw the following conclusions:

1. To fight successfully an epidemic of diphtheria, carriers must be found, and these, along with the contact cases, must be isolated.

2. A bacteriological examination of the throat must be made in order to discover the carriers. This makes absolutely necessary the maintenance of a bacteriological laboratory of the State Board of Health.

3. That antitoxin bears the same relation to clinical diphtheria that water does to fire. If the antitoxin is used in time and in sufficient quantites, the disease is simply put out with little damage and the patient makes an almost immediate recovery. In other words, when antitoxin is used in sufficient quantities in the first twenty-four hours of the disease the death rate is practically *nil* and there are no persistent bad after-effects of the disease.

TYPHOID AND PARATYPHOID.

The total number of specimens of blood examined during the year for the Widal reaction was 1,431, of which 113, or 7 per cent. were positive. During a part of July and all of August and September, every sample of blood submitted for the Widal reaction was tested for its power to agglutinate paratyphoid bacillus B. Altogether 442 specimens were thus tested. Fourteen were found to give a positive agglutination test with the paratyphoid bacillus and a negative reaction with the typhoid bacillus.

The number of specimens of blood examined each month for the Widal reaction is shown in Table 30.

TABLE 30.

Showing Number of Specimens of Blood Examined for the Widal Reaction Each Month.

Month.	Positive.	Negative.	Total.
October	15	143	158
November	4	111	115
December	5	102	107
January	1	76	77
February	2	72	74
March	3	64	67
April	1	65	66
May	2	78	80
June	1	81	82
July	5	127	132
August	39	205	244
September	35	194	229
Totals	113	1,318	1,431

The number of paratyphoid agglutination tests each month is shown in Table 31.

TABLE 31.

Showing Paratyphoid Agglutination Tests.

MONTH.	Positive.	Negative.	Totals.
July	1	11	12
August	12	226	238
September	1	171	172
Totals	14	408	442

The number of specimens of blood examined for Widal reaction from each county is shown in Table 32.

TABLE 32.

Showing Number of Blood Specimens from Each County, Examined for Widal Reaction.

County.	Positive	Negative.	Total.	County.	Positive.	Negative.	Total.
Adams	1	2	3	Lawrence	3	36	39
Allen	3	4	7	Madison	2	43	45
Bartholomew	....	8	8	Marion	26	295	321
Benton	2	10	12	Marshall	....	14	14
Blackford	....	9	9	Martin	....	2	2
Boone	3	12	15	Miami	3	21	24
Brown	....	....	......	Monroe	....	12	12
Carroll	1	8	9	Montgomery	2	15	17
Cass	....	18	18	Morgan	....	5	5
Clarke	1	8	9	Newton	....	4	4
Clay	....	....	......	Noble	....	8	8
Clinton	....	8	8	Ohio	....	....	......
Crawford	....	....	......	Orange	....	2	2
Daviess	....	5	5	Owen	....	3	3
Dearborn	....	9	9	Parke	....	3	3
Decatur	....	8	8	Perry	....	8	8
Dekalb	....	1	1	Pike	1	10	11
Delaware	3	20	23	Porter	....	3	3
Dubois	....	3	3	Posey	....	7	7
Elkhart	1	10	11	Pulaski	....	....	......
Fayette	....	14	14	Putnam	1	5	6
Floyd	....	4	4	Randolph	....	9	9
Fountain	1	8	9	Ripley	....	2	2
Franklin	1	8	9	Rush	2	13	15
Fulton	....	4	4	Scott	....	4	4
Gibson	3	6	9	Shelby	1	28	29
Grant	5	32	37	Spencer	3	30	33
Greene	2	4	6	Starke	....	1	1
Hamilton	3	16	19	Steuben	....	....	......
Hancock	2	9	11	St. Joseph	3	52	55
Harrison	....	4	4	Sullivan	....	5	5
Hendricks	3	17	20	Switzerland	....	1	1
Henry	4	16	20	Tippecanoe	....	21	21
Howard	1	18	19	Tipton	1	9	10
Huntington	1	7	8	Union	....	1	1
Jackson	1	13	14	Vanderburgh	2	49	51
Jasper	2	5	7	Vermillion	1	12	13
Jay	....	6	6	Vigo	3	21	24
Jefferson	1	17	18	Wabash	....	1	1
Jennings	2	14	16	Warren	1	7	8
Johnson	....	8	8	Warrick	....	....	......
Knox	....	20	20	Washington	....	....	......
Kosciusko	....	12	12	Wayne	6	56	62
Lagrange	1	16	17	Wells	3	4	7
Lake	....	12	12	White	....	8	8
Laporte	1	50	51	Whitley	....	2	2
Totals	40	483	532	Totals	64	832	896

COMPARATIVE STUDY OF CLINICAL SYMPTOMS AND AGGLUTINATION TESTS IN CASES OF SUSPECTED TYPHOID FEVER.

The small per cent. of positive Widal reactions obtained at this Laboratory has sometimes been a cause of complaint on the part of physicians. Various expedients have been tried in the effort to discover any possible source of error in technic. Last summer, as reported in the Report for 1911, two strains of *B. typhosus* were used and duplicate tests made on each specimen. During the summer of 1912 duplicate tests have been made on each specimen, using typhoid and paratyphoid bacilli. In this way, as shown above, 14 cases of infection with the paratyphoid bacillus have been discovered. This gives 122 positive agglutination tests (typhoid and paratyphoid) among 1,671 samples of blood, or 7 per cent.

An effort has been made to obtain more accurate clinical histories of patients whose blood gave a negative Widal reaction. The following letter was sent to physicians asking for further information in regard to specified cases:

DEAR DOCTOR:

We are very anxious to make a more thorough study of cases from which we receive blood for the Widal reaction with the hope of discovering the cause for the very few positive reactions obtained in this Laboratory. This is prompted by a desire to make the Laboratory more serviceable to the physicians of Indiana, and we feel sure that we can depend upon you to cooperate with us in this undertaking. If you will give us information on the following case from which you sent blood for a Widal test on...... .... it will help us very much. Please use the greatest accuracy possible under the circumstances.

Patient's name.. Age................ Sex................

Date of onset............................ Date of death or recovery......................................

	MORNING.		AFTERNOON.	
	Temperature.	Pulse.	Temperature.	Pulse.
1st week..................	....	....	....	....
2d week..................	....	....	....	....
3d week..................	....	....	....	....
4th week..................	....	....	....	....
5th week..................	....	....	....	....

Diarrhea?....................

Nose bleed?...................

Tympanites....................

Constipation?..................

Rose spots?.....................

Hemorrhage?....................

Spleen enlarged?..............

Headache?.......................

Perforation?....................

Your diagnosis at the time the blood was taken for Widal was...... .... Did any later developments in the case cause you to change your diagnosis?————. If so, what was your final diagnosis?

Please use the above blanks for reply. Any information you may give us will be very much appreciated.

Yours very truly,

....

Superintendent.

About 170 of these letters were sent out for cases occurring in May, June and July. One hundred and twenty-one replies were obtained. The facts secured may be tabulated thus:

	Number.	*Per Cent.*
Clinical diagnosis typhoid throughout.................	32	26
Clinical diagnosis typhoid and changed................	33	28
Clinical diagnosis never typhoid......................	45	37
Clinical diagnosis uncertain throughout...............	9	7
Clinical diagnosis paratyphoid........................	2	less than 2
Totals	121	100

In 37 per cent. of the cases the clinical diagnosis was never typhoid fever. This diagnosis in these cases varied from carcinoma of the stomach to "pleurisy," "nasal infection," etc. In 28 per cent. the physician was convinced by the clinical course of the disease that it was not typhoid and changed his diagnosis. Thus in 65 per cent. of these cases the final diagnosis was definitely not typhoid fever, while in only 26 per cent. was that diagnosis made and adhered to.

Of the 32 cases in which the clinical diagnosis of typhoid was adhered to by the physician, in 11 there was no loss of motility and no agglutination; in 8 there was partial loss of motility with no agglutination, and in 13 there was complete loss of motility and partial but not complete agglutination. An analysis of these cases yields some interesting results

The clinical histories of the 11 cases which showed neither loss of motility nor agglutination are shown in tabular form in Table 33.

TABLE 33.

Showing in Tabular Form Clinical Histories of Cases Showing Neither Loss of Motility nor Agglutination in Widal Tests.

Case No.	Age.	Sex.	Day of Disease Widal Taken.	Duration of Disease.	Temperature Curve.	Pulse.	Nose Bleed.	Constipation.	Diarrhea.	Tympanitis.	Rose Spots.	Headache.	Spleen Enlarged	Hemorrhage.	Perforation.
1	40	Male......	3d week....	20 days...	Typhoidal°.........	Slow in comparison with temperature.	....	....	....	....	....	....	....	....	....
2	52	Female.....	9th day.....	?	Typhoidal°.........	Slow in comparison with temperature.	....	....	....	....	....	....	....	....	....
3	16	Female.....	14th.......	Died 16th day.	Typhoidal°.........	....	....	....	....	....	....	....	....	....	....
4	37	Male.......	16th.......	37 days...	Typhoidal°.........	Slow in comparison with temperature.	....	....	....	....	....	....	....	....	....
5	45	Female.....	10th.......	24 days...	Typhoidal°.........	?				?	?	....	....	....	....
6	11	Female.....	8th & 10th..	15 days...	Highest in 1st week.	Slow in comparison with temperature.	....	....	....	....	....	....	....	....	....
7	34	Female.....	8th........	?	Highest in 1st week..	120 to 140..........	....	....	....	....	....	....	?	....	....
8	11	Female.....	13th.......	13 days ..	Highest in 1st week..	Slow in comparison with temperature.	....	....	....	....	....	....	....	....	....
9	20	Male.......	7th.......	14 days...	Highest in 1st week..	Slow in comparison with temperature.	....	....	....	....	....	....	....	....	....
10	22	Male.......	10th.......	14 days...	Highest in 1st week..	Slow in comparison with temperature.	....	....	....	....	....	....	....	....	....
11	5	Male.......	7th, 10th, 14th.....	25 days...	Steadily high 1st to 3d week; suddenly normal.	120 to 140.........	....	....	....	....	?	....	....	....	....

°By Typhoidal is meant the step-like temperature curve seen in typical cases of typhoid fever.

In this group of cases the disease was in most instances mild. There was one death, due to perforation, on the 16th day. In one case there was hemorrhage. In the majority of cases the disease was of that duration. The temperature was highest at the beginning and rapidly returned to normal. The other clinical symptoms were not clear-cut. It might well be questioned whether more than two or three of these were genuine typhoid fever rather than an infection with some less pathogenic member of the colon-typhoid group. Unfortunately no paratyphoid agglutination test was made on any of these specimens. In 9 of the 11 cases the blood for Widal was taken before the 14th day of the disease.

A summary of the 8 cases showing complete loss of motility with no agglutination is shown in Table 34.

TABLE 34.

Showing Clinical Histories Cases Showing Complete Loss of Motility and no Agglutination on Widal Test.

Case No.	Age.	Sex.	Day of Disease Widal Taken.	Duration of Disease.	Temperature Curve.	Pulse.	Nose Bleed.	Constipation.	Diarrhea.	Tympanitis.	Rose Spots.	Headache.	Spleen Enlarged	Hemorrhage.	Perforation.
1	38	Female.....	11th.......	?	Typhoidal°.........	Slow compared with temperature.	....	....	....	....	....	....	....	....	....
2	60	Male.......	20th.......	....	Typhoidal°.........	Slow compared with temperature.	....	....	....	....	....	....	....	....	....
3	16	Male.......	21st.......	....	Ran usual course of Typhoid.	....	....	....	....	....	....	....	....	....	....
4	......	....	12th.......	47 days...	Typhoidal° relapse..	Slow compared with temperature.	....	....	....	....	....	....	....	....	....
5	32	Female.....	10th.......	Died 25th day.	Rarely over 101....	....	....	....	....	....	....	....	....	....	....
6	44	Male.......	3d week....	3½ weeks	Never high.........	....	....	....	....	....	....	....	....	....	....
7	55	Male.......	10th day...	21 days...	Highest in 1st week..	85 to 105..........	....	....	....	....	....	....	....	....	....
8	29	Male.......	10th, 13th..	11 days...	Highest in 1st week..	72 to 100..........	....	....	....	....	....	....	....	....	....

°By Typhoidal is meant the step-like temperature curve seen in typical cases of typhoid fever.

In this group there was one death, the desease tended to run a longer course than in the previous group, and a smaller proportion of cases showed a temperature curve highest in the first week and rather suddenly becoming normal. Most of the specimens of blood were taken before the 14th day.

The cases showing complete loss of motility and partial agglutination are tabulated in Table 35.

TABLE 35.

Showing in Tabular Form Clinical Histories of Cases Showing Complete Loss of Motility and Partial Agglutination in Widal Tests.

Case No.	Age.	Sex.	Day of Disease Widal Taken.	Duration of Disease.	Temperature Curve.	Pulse.	Nose Bleed.	Consti-pation.	Diar-rhea.	Tym-panitis.	Rose Spots.	Head ache.	Spleen Enlarged	Hemor-rhage.	Perfor-ation.
1	22	Female	10th	?	Definite course of mild Typhoid.	Slow compared with temperature,	......	......	......	......	......	......	......	......	......
2	17	Female	14th, 21st	29 days	Typhoidal*	Slow compared with tempe ature.	......	......	......	......	......	......	......	......	......
3	37	Male	7th	36 days	Typhoidal*	Slow compared with tempe ature.	......	......	......	......	......	......	......	......	......
4	20	Male	7th	....	Typhoidal*	Slow compared with temperature.	......	......	......	......	......	......	......	......	......
5	19	Female	7th, 16th	Died 17th day.	Typhoidal*	100 to 130	......	......	......	......	......	......	......	......	......
6	17	Female	10th	37 days	Typhoidal*	80 to 90	......	......	......	......	......	......	......	......	......
7	5	Male	7th	25 days	Typhoidal*	100 to 120	......	......	......	......	......	......	......	......	......
8	22	Male	9th	30 days	Typhoidal*	80 to 96	......	......	......	......	......	......	......	......	......
9	2½	Female	31st	31 days	?	?	......	......	......	......	......	......	......	......	......
10	27	Male	3d, 6th	21 days	Highest in 1st week	Slow compared with temperature.	......	......	......	......	......	......	......	......	......
11	21	Male	3d, 7th	38 days	Highest in 1st week	80 to 90	......	......	......	......	......	......	......	......	......
12	41	Female	11th	11 days	Highest in 1st week	96 to 100	......	......	......	......	......	......	......	......	......
13	8	Male	10th, 14th	50 days	Highest in 1st week	84 to 110	......	......	......	......	......	......	......	......	......

*By Typhoidal is meant the step-like temperature curve seen in the typical cases of typhoid fever.

In this group there was one death, the distended to run a longer course than in either of the other groups, and the various clinical symtom complexes were more typical of typhoid fever.

It is evident that some of the cases in each group were infections with *B. typhosus* in spite of the negative Widal reaction. In all these tests the microscopic method was used. The standard advised by Wilson had been rigidly adhered to, namely, all bacilli in the hanging drop must have become completely immobilized and practically all of them drawn away from the edge and collected into *large* clumps. While rigid adherence to this standard will effectively eliminate pseudo-reactions that might lead to a diagnosis of typhoid fever in cases in which this infection is not present, it probably does confuse some physicians and cause them to hesitate to pronounce typhoid fever in many cases which are true infections with *B. typhosus*. It would seem, therefore, that a reaction showing complete loss of motility and partial agglutination might almost be taken as the equivalent of a positive test if supported by clinical evidence.

CULTURES FROM STOOLS.

Early in May of this year a new outfit was prepared for sending cultures from stools to the Laboratory. It was intended that this outfit should be used in four classes of cases, namely suspected typhoid bacilli carriers, cases of suspected typhoid as a help in diagnosis, cases of dysentery, and cases of food poisoning and obscure intestinal infections.

The outfit consisted of a tube of sterile ox bile, with perfectly fitting cork and a sterile swab wrapped in paper, both enclosed in a double mailing case, the inner case of which was made of tin. With the outfit the following directions were sent:

DIRECTIONS FOR TAKING CULTURES FROM STOOLS TO BE EXAMINED FOR TYPHOID BACILLI.

Carefully unroll the swab which is wrapped in paper, straighten out the wire without touching the cotton, dip the cotton end of the swab into the stool, then dip the saturated cotton end into the fluid contents of the small test tube. After shaking the swab around in the tube enough to get a considerable amount of fecal matter in suspension, remove the swab and burn it, cork the tube carefully and mail it to us in the container in which it is sent you.

Altogether 90 samples of stools were examined. Of these, 78 were examined for typhoid bacilli and 12 for dysentery bacilli. The results of the examinations for typhoid bacilli are shown in Table 36.

TABLE 36.

Showing the Results of Examination of Stools for Typhoidal and Paratyphoidal Bacilli.

Time of Taking Culture.	Clinical Diagnosis Typhoid.			Clinical Diagnosis Possibly Typhoid.		Clinical Diagnosis Paratyphoid.		Clinical Diagnosis Not Typhoidal.	
	Total.	Typhoid Bacilli Isolated.	Paratyphoid Bacilli Isolated.	Total.	Typhoid Bacilli Isolated.	Total.	Paratyphoid Bacilli Isolated.	Total.	Typhoid Bacilli Isolated.
First week	2	1	0			2	0		
Second week	18	1	2	3	0	3	1	7	0
Third week	10	4	0	3	0	1	1	4	1 (?)
Fourth week	7	2	1					3	1
Fifth week	1	0	0					1	0
Sixth week								1	0
Sixth to tenth	2	0	1					2	0
Not stated	1	1	0						
Suspected carrier	5	3	0						
Totals	46	12	4	6	0	6	2	18	2 (?)

From this table it is seen that typhoid bacilli were isolated from 13 cultures and paratyphoid bacilli from 6. Three of the typhoid cultures were from the carriers reported in another part of this Report. These typhoid bacilli were definitely identified by means of agglutination with known antityphoid serum. The paratyphoid bacilli were identified by their cultural and morphologic characteristics only.

As was to be expected, of the specimens taken during the course of the disease, a large proportion were positive during the third and fourth weeks than at any other time.

One specimen of blood taken on the eighth day of the disease contained *B. typhosus*, although this organism could not be found in a sample of the patient's stool taken on the same day.

Of 12 cultures examined for dysentery bacilli, 4 contained these organisms, 3 being of the Flexner type and 1 corresponding to the Shiga type. *B. aerogenes capsulatus* was isolated from 2 stools, from one of which there was isolated an organism with the cultural characteristics of *B. paratyphosus* and another which culturally resembled Morgan's Bacillus No. 1.

EPIDEMIC OF TYPHOID FEVER AT VEEDERSBURG.

A small epidemic of typhoid fever which occurred at Veedersburg was investigated by Dr. Shimer, whose report follows:

At the request of Mr. J. L. O., of Veedersburg, we investigated the cause for the continued presence of typhoid fever in his family.

August 13, 1911, his oldest daughter, Miss L. M. O., attended an old settlers' picnic, after which she visited a family in the country for two weeks. September 20th she left home to attend college. At that time she had some fever and headache. She returned home in a few days and remained in bed until about November 1st with a typical attack of typhoid fever. Her mother, Mrs. O., took care of her. A sister-in-law did the housework and cooking. During October a sister and brother, both under nine years of age, had attacks of diarrhea and indigestion, from which they recovered in less than two weeks.

During the first week of December, Mrs. O. was compelled to go to bed. She was in bed three weeks with a typical attack of typhoid. A trained nurse took care of her. During the second week of January, 1912, a daughter aged fifteen, went to bed with a typical attack of typhoid and had not been able to be up when I visited the O. home, February 13th.

There are several interesting things about this series of cases. First, there were no flies during most of the period covered by these cases; second, there are no cases of typhoid among several other people who use milk from the same source as this family; and third, they get their water from a source which supplies all of Veedersburg, and there was possibly only one other case of typhoid in the town.

Of the various other possible explanations of the source of these cases of typhoid in the same family, the one that seems most possible to us is that Miss L. M. O. acquired her infection somewhere outside the home, that she passed the infection on to her younger sister and brother, and she, or they, infected their mother, with all of these cases as a possible source of infection of the last case.

Mrs. O. described to us the means she took for rendering the urine and feces sterile. However, she did not seem to appreciate the infectiousness of the stools and urine, for she had been told that typhoid fever was neither contagious nor infectious, and that she could nurse her daughter without danger of infecting herself or family. That all of these cases except the first one came from close contact is substantiated by the fact that Mr. O. and a son, sixteen years of age, did not have typhoid or any intestinal disturbance during this period.

Mr. O. and his son are now being vaccinated against typhoid.

The conclusions to be drawn from these cases are as follows:

1. No person who nurses a case of typhoid fever should have anything to do with preparing or cooking food for anybody else.
2. The nurse should carefully sterilize her hands before eating.
3. The feces and urine must be sterilized before disposal.
4. All bed linen and other things used by typhoid patients must be sterilized before being washed or used by any one else.
5. All members of the family, as well as the nurse, should be vaccinated against typhoid.
6. In all cases, where possible, the patient should be isolated from the family, or, even better, taken to a general hospital, if it is possible.

The rules are very necessary, for after water, milk and bacilli carriers, direct contact with persons sick with typhoid fever is the most fruitful source of typhoid infection.

EPIDEMIC OF DYSENTERY AT VINCENNES.

An epidemic of dysentery at Vincennes was investigated by Dr. Shimer, who makes the following report:

During the first part of December, 1911, several boys under ten years of age at the St. Vincent's Orphanage of Vincennes, Ind., were prostrated with attacks of severe diarrhea, accompanied by much pain and tenderness. This was soon followed by frequent discharges, at times containing considerable blood and mucus. At no time does the bowel discharges seem to have been very watery.

There were altogether about twenty cases with one death and one or two others very critically ill.

Samples of water from three wells and two cisterns were sent to the Bacteriological Laboratory. One well was found to be very suspicious. Every fermentation tube inoculated with this water gave 30 per cent. of gas. This well is situated at the foot of a hill on top of which is an ordinary open privy used by all the boys while on the playground. The use of water from this well was immediately discontinued.

One meets several difficulties in attempting to explain the source of this epidemic, because there are no flies at this time and the Sisters and older boys used the same milk and water supplies as the younger boys and yet they showed absolutely no symptoms of colitis. The small boys were probably infected by drinking water from the well at the foot of the hill. Later infection was spread to other small boys by exchanging of pencils, slate rags, and other belongings and a habit which boys of this age have of putting things in their mouths.

The severity of the infection was no doubt aggravated by the usual institutional anemia and malnutrition.

Microscopical and bacteriological examinations of the feces from four boys who were most seriously sick were made. Smears made direct from the feces and stained with Gram's stain showed many Gram positive staphylococci and streptococci, also many Gram negative bacilli resembling typhoid or paratyphoid bacilli. Inoculation of plain broth showed none of these Gram negative bacilli to be alive.

Portions of the feces were inoculated on Endo's medium and litmus glucose agar. All of the bacteria isolated from these plates were Gram positive streptococci.

One of the difficulties in isolating paratyphoid bacilli from these feces is the fact that it was fourteen hours between the time of taking and inoculation onto the bacteriological media. The members of the colon typhoid group were probably killed off by the streptococci and colon bacilli.

Blood from three of these patients gave a negative Widal for typhoid and paratyphoid bacilli.

In spite of the negative results of the examination of the feces and blood the infection was more than likely due to some member of the colon typhoid group of bacilli.

MALARIA.

The number of cases of malaria coming under our observation during the past year was smaller than in previous years, as is shown in the following table:

TABLE 37.

Showing Number of Cases of Malaria by Years.

Year.	Number of Cases.
1907	2
1908	5
1909	16
1910	12
1911	24
1912	6

The positive specimens received in 1912 were from the following counties:

Decatur 1, Marion 1, Monroe 1, Blackford 1, Spencer 2, and Pike 1. One specimen contained parasites of the Aestivo-autumnal variety, the others tertian forms. Two of the cases were infected in Arkansas, one in Indiana, and four were not given. Only one of the seven patients was a female.

VENEREAL DISEASES.

1. GONORRHEA.

During the year —— specimens of pus were examined for gonococci, of which —— contained these organisms. The number of specimens received each month, classified according to results of examination and sex of patient, is shown in Table 38.

TABLE 38.

Showing Number of Specimens Examined for Gonococci Each Month.

MONTH.	MALES.			FEMALES.			SEX NOT STATED.			Totals.
	Pos.	Neg.	Doubt.	Pos.	Neg.	Doubt.	Pos.	Neg.	Doubt.	
October...	7	12	....	4	11	5	3	....	....	42
November.	5	11	....	4	5	....	....	....	....	25
December.	17	14	3	4	8	4	4	9	....	63
January...	18	16	....	13	19	1	5	6	....	58
February..	14	25	....	3	8	....	....	....	....	50
March....	16	16	....	14	10	....	....	....	....	56
April......	9	5	....	10	6	....	4	2	....	36
May......	11	19	....	4	8	2	....	....	....	44
June......	10	19	....	9	9	9	....	....	....	56
July......	19	2	....	4	13	6	1	3	....	48
August....	13	21	....	9	16	....	4	7	....	70
September.	14	10	....	5	10	....	....	....	....	39
Totals.	153	170	....	83	116	27	21	27	....	627

Dr. Schweitzer has again studied the cases of gonorrheal infection in children that have come to our notice during the year. Her study of these cases and summary of all the cases of the past three years follow:

2. GONORRHEA IN CHILDREN.

During 1912 twenty pus specimens from 16 children under twelve years of age were found to contain gonococci. A study of the case histories gives further emphasis to conclusions drawn from previous reports. In two cases the sex of the patient was not given. All those reported were females.

Ten specimens were taken from the vagina, 3 from the urethra, one from the cervix and three from the eye. Vaginal and cervical specimens were received from a patient apparently cured after an infection lasting from February 25, 1911, to August 31, 1911, ten pus examinations having been made. In January, 1912, following an attack of typhoid fever, a recrudescence occurred, and the specimens, one sent in January and one in February, showed a few gonogocci.

One child of ten had a gonococcus infection which had been recurring at intervals for six years. It is difficult to determine when a case is really cured.

The youngest patients were those having gonorrheal ophthalmia, the ages being 3 weeks, 9 weeks and 6 months respectively. No history of infection could be obtained in the first case. Recovery was good. The case infected at 9 weeks was an illegitimate child whose mother had no medical attendance at her confinement and was nursed by her male companion. The source of infection in the child six months old was probably disease in the parents, although no such history could be obtained. The physician, however, made a correct diagnosis and sent a specimen to the State Laboratory for confirmation, "to protect himself in case the child lost her sight."

The ages of the children having genito-urinary infections range from 16 to 18 months to ten years. Seven of these were said to have been infected by contact with bedding or towels contaminated by the parents, or other relatives or by other persons. One child of seven years was infected by a negro child with whom she had played.

In two cases there was a history of rape, one little girl of eight and another of six. In the latter case an uncle was suspected, and pus from a sheet contaminated by him was found on microscopic examination to contain gonococci. The disease in the child ran an unusual course. The hymen did not appear to be ruptured. The discharge disappeared rapidly under argyrol, but the child complained at night of severe pains, first in one place then another. In the shoulder there was no swelling, but tenderness was present. Intense pain occurred, first in the lower abdomen then in the upper. In the morning the temperature was 97.8°, coming up at 5 or 6 p. m., and at 2 a. m. was 103. The child cried all night with pain. The symptoms pointed to a generalized infection.

The child of 16 months was the youngest of the family of five infected by parents.

Many of the above cases are comparatively recent in origin, and history of their progress has not been received.

The total of 50 positive specimens from suspected cases of gonorrhea in children have been examined during the years 1910, 1911 and 1912. Of these only two were males. In ten cases one or both parents were responsible as infecting agents. One father who had been infected by illicit intercourse with a woman known to have gonorrhea was warned emphatically by his physician of the danger to his family. His carelessness, however, soon resulted in the infection of his little seven-year-old daughter, from whom a specimen of urethral discharge showed many gonococci.

The nationality was given in so few cases as to be of little value in amking general deductions. In the few cases occurring among foreigners it would be of interest to know to what extent their beliefs or superstitions are responsible for the infection of children.

A few physicians are inclined to doubt the existence of venereal disease in children, saying that there have been no cases in their practice. The fact that one reputable physician has reported three cases, and in each case has traced the source of the infection in the face of considerable difficulty, shows that one who fully awakes to the possibilities may accomplish much in the way of prevention.

It is time that the physician at least, lay aside false modesty and when a child having a suspicious discharge is brought to him, that he employ all reliable means to determine the nature of the infection and its source; and having done this to fully instruct the parents as to their duty in preventing its further spread.

The proper management of these early infections will solve many problems for the gynecologist of the future, and will do much to insure the perpetuation and happiness of the race.

3. SYPHILIS.

Very few requests for examination of material for spirocheta pallida are received. Such examinations are usually unsatisfactory, largely because very few specimens are properly taken. These organisms will not grow in the presence of air; hence they are practically never present in the surface secretions. The surface of a lesion must be gently scraped until lymph, as free from blood as possible, exudes. This lymph washes up the spirochetes from the deeper tissues and will usually be found to contain them in large numbers if the lesion is syphilitic.

Only six specimens were examined for spirocheta pallida during the year. All were negative.

RABIES.

The epidemic of rabies shows no indication of abating. On the contrary there has been a steady increase in the number of cases from year to year. This is shown in Table 39.

TABLE 39.

Showing the Number of Cases of Rabies and the Percentage of Positive Results.

YEAR.	Number of Positive Cases.	Percentage of Total Number Examined Found Positive.
1907..............	12	84%
1908..............	73	85%
1909..............	69	44%
1910..............	66	51%
1911..............	114	48%
1912..............	......	......

The brains of 314 animals were examined during the year and 158, or 50 per cent., found to be suffering from rabies. The number of brains examined each month is shown in Table 40.

TABLE 40.

Showing Number of Animal Brains Examined for Negri Bodies Each Month.

MONTHS.	Positive.	Negative.	Unsatisfactory*	Totals.
October..............................	5	5	1	11
November..............................	9	7	....	16
December..............................	9	9	....	18
January..............................	14	15	1	30
February..............................	13	11	....	24
March..............................	16	14	....	30
April..............................	27	11	1	39
May..............................	21	23	4	48
June..............................	13	12	3	28
July..............................	11	13	2	26
August..............................	14	9	....	23
September..............................	6	15	....	21
Totals..............................	158	156	....	314

*Rotten.

The relative slight influence of the seasons on the prevalence of rabies is shown in Table 41, compiled from the statistics of the past six years. The disease is just about as prevalent in January as it is in July.

TABLE 41.

Total Number of Animal Heads, Showing Negri Bodies Each Month for Six Years.

MONTH.	1907.	1908.	1909.	1910.	1911.	1912.	Totals.
January	....	4	7	4	9	16	36
February	....	4	9	4	11	12	40
March	....	3	7	2	10	22	46
April	....	4	4	2	12	29	55
May	....	1	5	10	8	18	42
June	....	9	8	13	3	13	47
July	....	16	5	5	6	11	43
August	....	15	1	5	13	23	57
September	....	4	6	5	17	21	53
October	....	3	4	6	7	....	20
November	1	2	6	3	10	....	22
December	3	8	7	7	9	....	34
Totals	4	73	69	66	114	....	....

The number of each kind of animal brain examined is shown in Table 42.

TABLE 42.

Showing the Number and Kind of Animals Found to Have Rabies.

Month.	Positive.					Negative.							Rotten.		Unsatisfactory.
	Dog.	Cat.	Hog.	Cow.	Horse.	Dog.	Cat.	Horse.	Hog.	Human.	Calf.	Rabbit.	Dog.	Hog.	Dog.
October	5	......	......	......	......	4	1	......	......	......	......	......	......	......	1
November	8	......	......	1	......	5	......	......	1	1	......	......	......	......	......
December	9	......	......	......	......	9	......	......	......	......	......	......	......	......	......
January	14	......	......	......	......	15	......	......	......	......	......	......	1	......	......
February	13	......	......	......	......	11	......	......	......	......	......	......	......	......	......
March	16	......	......	......	......	14	......	......	......	......	......	......	......	......	......
April	22	......	......	5	......	11	......	......	......	......	......	......	......	......	1
May	17	......	......	3	1	19	2	1	......	......	......	1	......	......	4
June	11	1	1	......	......	8	2	......	......	......	2	......	3	......	......
July	11	......	......	......	......	12	1	......	......	......	......	......	2	......	......
August	14	......	......	......	......	9	......	......	......	......	......	......	......	......	......
September	6	......	......	......	......	15	......	......	......	......	......	......	......	......	......
Total	146	1	1	9	1	133	6	1	1	1	2	1	6	......	6

CASE OF RABIES IN A HUMAN.

A brain of unusual interest was that of a man who died of rabies at the Logansport Insane Hospital.

This man was bitten several weeks before death by a rabid dog. The wound healed in the course of ten days or two weeks and gave him no trouble until Thursday, November 30, 1911, when he was seized with severe pains about the wound and later in the arm and back of his neck.

That night he was restless. Friday, he had a rise of temperature to 100°F., there was dilation of the pupils, abnormal secretion of mucus, and during the evening there developed spasms of the glottis and pharynx. Friday night he was sleepless. Saturday his temperature raised to 103°F., the salivation was more marked and he was restless, incoherent, and, at times, maniacal. He did not drink water or milk or take food. This condition persisted throughout Saturday night and Sunday until about noon when he became more quiet.

Sunday afternoon about four o'clock his pupils were dilated and his eyes suffused, his pulse was 130-135, his temperature 101. There was copious secretion of ropy tenacious mucus, the tongue was heavily coated, his talk was rambling and his movements uncertain. Sunday night these same conditions persisted until four o'clock, at which time he had a convulsive seizure involving the entire body. This seizure lasted about thirty minutes and was succeeded at six o'clock by another of shorter duration. These same conditions continued until about twelve o'clock Monday, at which time he had another convulsive seizure, in which he died.

The history of this case was furnished by Dr. F. W. Terflinger, Superintendent for Northern Hospital for Insane, Longcliff, Logansport, Ind.

A microscopical examination of the above mentioned brain showed it to contain many Negri bodies. A guinea pig injected developed rabies. The clinical history of this case and that of the boy who recently died at the Indianapolis City Hospital (Recorded in the Report for 1911), shows that it is very difficult or almost impossible to make an absolutely certain clinical diagnosis of rabies. In both of these cases of supposed rabies a careful examination of the brains after death was necessary to clinch the clinical diagnosis.

PASTEUR TREATMENT.

Up to September 30, 1912, 92 patients had been given Pasteur treatment under the Rabies law passed by the last Legislature and others were then undergoing treatment. Eighteen of these were treated during the fiscal year ending September 30, 1911, and the results recorded in the Annual Report of that year. Ninety-two patients therefore, have been treated during the preceeding year.

Of the 92 patients, 65 were males, and 37 females.

TABLE 43.

Showing Ages of Patients.

Year.	Number
Up to 5 years	14
6 to 10 years	16
11 to 20 years	15
21 to 40 years	31
41 to 60 years	14
61 and up	2
Total	80

TABLE 44.

Showing Location of Bite.

Location.	Number.
Hand	35
Leg	17
Arm	16
Head and face	12
Body	1
Head and hands	1
Hands and legs	1
Arm and hand	2
Head, arm and leg	1
Total	80

Two other patients had been doctoring a horse sick with rabies and suffered abrasions of the hands; one had cared for her mother, who had died of hydrophobia; and one had sucked the wound inflicted on her child by a rabid dog.

Three patients were bitten or otherwise injured by rabid horses; three were bitten by cats; other remaining 74 by dogs.

TABLE 45.

Showing Time Which Elapsed Between Occurrence of Bite and Beginning of Treatment.

Time.	Number.
2 days	2
3 to 4 days	14
5 to 7 days	33
2nd week	28
3rd week	4
4th week	5
After 4th week	5
Total	80

Six patients who began treatment in the fourth or fifth weeks after being bitten gave the following histories:

One patient was bitten by a dog from whose bite another person developed hydrophobia and died.

One woman sucked the wound made on her child by a rabid dog; another nursed her mother who died of hydrophobia. Two patients did not take treatment until live stock bitten by the same dogs had died of rabies. In the sixth case, the dog was killed immediately after biting the patient, but the head was not examined. There was no special evidence of rabies, but the mental anxiety of the patient made treatment necessary.

The counties from which patients have come is shown in Table 46.

TABLE 46.

County.	Number.
Bartholomew	2
Blackford	1
Cass	1
Clinton	1
Dearborn	17
Dubois	1
Fayette	1
Fountain	1
Hamilton	1
Hancock	1
Harrison	2
Hendricks	2
Howard	1
Huntington	1
Jasper	1
Jefferson	2
Jennings	6
Marion	22
Monroe	1
Montgomery	3
Porter	1
Randolph	2
Whitley	4
Rush	2
Scott	1
Sullivan	1
Vanderburgh	2
Vigo	4
Warrick	2
Washington	4
Wayne	8

The 56 patients were bitten by —— different animals. Of these there was no positive proof of rabies in four animals, three not being sent to the Laboratory and one being too much decomposed when received to permit examination. Two dogs were proved rabid by the death of two humans and one by the death of live stock bitten by them. —— of these animals were proved to have rabies by Laboratory examination.

In one instance the same dog bit seven people, only one of whom was treated at the State's expense; in another, six persons were bitten by one dog; in another 5; and in 2 instances, 3 persons were bitten by the same dog.

The treatment has thus far proved eminently successful. There has been no case of local infection from the injections. No. patient has developed hydrophobia after treatment, although in at least four cases the bites were severe and especially dangerous and the outlook at the time of beginning treatment very grave.

PATHOLOGICAL TISSUES.

The work of examining pathological tissues continues to increase in amount, as shown in Table 2 at the beginning of this Report. The number of such specimens examined each month and the total for the year are shown in Table 47.

TABLE 47.

Showing Number of Pathological Tissues Examined Each Month.

MONTH.	Carcinoma.	Sarcoma.	Gasserian Ganglion.	Miscellaneous.	Total.
October	10	1	7	36	54
November	5	1	9	28	43
December	11	4	12	31	58
January	12	2	26	15	55
February	10	....	25	18	53
March	12	1	28	31	72
April	7	2	35	21	65
May	13	....	30	35	78
June	9	....	30	24	63
July	14	....	26	25	68
August	7	....	20	26	53
September	30	....	15	7	52
Total	140	11	263	297	714

THE MUSEUM OF PATHOLOGY.

It has been possible during the last four years to accumulate a number of pathological specimens, some of which are very rare and valuable. These are properly mounted, but at present lack of space prevents their being placed on exhibit in the Laboratory. These specimens have been obtained at post mortems or have been brought or sent to the Laboratory by physicians. It is the desire of the Laboratory staff to make this museum more complete and more useful to the physicians of the State. In a few instances specimens have been taken to local medical meetings in various parts of the State and demonstrated by a representative of the Laboratory to illustrate some paper read by a local physician. The usefulness of the museum along this line should be increased. The following is a list of the specimens now in the museum:

No. 1. Vegetative endocarditis. Case of Dr. C. K. Bruner, Greenfield.
No. 2. Infarct of the spleen. Case of Dr. C. K. Bruner, Greenfield.
No. 3. Ulceration of the colon; bacillary dysentery. Case of Dr. J. C. Bohn, Terre Haute.
No. 4. Mucous cast of the bowel.
No. 5. Hydatid mole.
No. 6. Hydatid mole.
No. 7. Liver and kidney from case of phosphorus poisoning.
No. 8. Carcinoma of the stomach. Case of Dr. T. B. Johnston, Jamestown.
No. 9. Fibro-myoma of uterus; partial calcification. Case of Dr. W. H. Lane, Angola.
No. 10. Bilateral kidney stone. Case of Dr. J. A. Salb, Indianapolis.
No. 11. Chronic ulceration of the foot, frozen off 30 years before.
No. 12. Fibro-sarcoma of the mediastinum; complete occlusion of superior vena cava. Case of Dr. Groendyke, New Castle.
No. 13. Hemorrhage into Rolandic area. Case of Dr. D. W. Fosler, Indianapolis.
No. 14. Hobnail liver. Case of Dr. R. S. Chappell, Indianapolis.
No. 15. Syphilitic basilar meningitis. Case of Dr. Stone, Shoals.
No. 16. Carcinomatous necrotic tissue expelled from uterus.
No. 17. Sarcoma of the testicle. Case of Dr. T. J. Dugan, Indianapolis.
No. 18. Metastatic sarcoma in the lung. Case of Dr. T. J. Dugan, Indianapolis
No. 19. Metastatic sarcoma in the lung. Case of Dr. T. J. Dugan, Indianapolis.
No. 20. Metastatic sarcoma in the kidney. Case of Dr. T. J. Dugan, Indianapolis.
No. 21. Perforated duodenal ulcer. Case of Dr. W. H. White, Edinburg.
No. 22. Carcinoma of the ovary. Case of Dr. J. Y. Welborn, Evansville.
No. 23. Endotherioma of the uterus (3-year-old child). Case of Dr. H. S. Mackey, Indianapolis.
No. 24. Papilloma of the larynx. Case of Dr. V. V. Cameron, Marion.
No. 25. Tuberculous ulcers of the intestine. Case of Dr. Alfred Henry, Indianapolis.
No. 26. Carcinoma of cervix uteri.
No. 27. Exophthalmic goiter. Case of Dr. Goethe Link, Indianapolis.

No. 28. Metastatic carcinoma of liver.
No. 29. Myxo-sarcoma, prepatellar region. Case of Dr. J. H. Ford, Indianapolis.
No. 30. Scirrhous carcinoma of the breast.
No. 31. Hemangioma of the liver. Case of Dr. J. F. Dugan, Indianapolis.
No. 32. Suppurative appendicitis. Case of Dr. T. C. Kennedy, Indianapolis
No. 33. Invasion of inferior vena cava by carcinoma. Case of Dr. Greist. New Castle.
No. 34. Melano-sarcoma of the eye. Case of Dr. Page, Indianapolis.
No. 35. Fibrino-purulent pericarditis. Case of Dr. C. S. New, Indianapolis.
No. 36. Dermoid cyst of the ovary.
No. 37. Four weeks embryo. Case of Dr. H. H. Thompson, Noblesville.
No. 38. Aneurysm of sorta; rupture into pericardium. Case of Dr. G. T. McCoy, Columbus.
No. 39. Tuberculosis in a chicken. Case of Dr. N. A. Kremar, Madison.

MISCELLANEOUS EXAMINATIONS.

A total of 4,426 specimens of urine, pus, blood and miscellaneous unclassified examinations were made during the year. The number of these examinations made each month are shown in Table 48.

TABLE 48.

Month.	Number.
October	59
November	61
December	69
January	40
February	54
March	73
April	89
May	103
June	70
July	69
August	94
September	80
Total	861

BACTERIOLOGY OF SODA POP.

About the middle of June Mr. H. E. Barnard brought to the Laboratory three samples of raspberry soda pop. The manufacturer had had much of his pop ruined because it become syrupy and ropy. On pouring the pop from the bottle it varied in consistency in various bottles from that of thin syrup to that of the white of egg. Even in the worst samples there was no turbidity. No other flavor except raspberry appeared to be affected. Only one of the three samples brought to the Laboratory showed this ropiness or viscidity. All three bottles were examined bacteriologically and none were sterile. In all there was a dirty brown sediment after standing for several days.

Broth cultures from bottle No. 1 showed a few yeasts and many bacilli which were not further identified.

In broth culture from bottle No. 2 there were many yeasts and a few unidentified bacilli, but the predominating bacteria were long chain streptococci.

The pop in bottle No. 3 showed the viscidity mentioned above. From it were isolated two bacilli one of which was not definitely identified. The other organism showed the following characteristics: It was a non-motile, Gram negative bacillus growing singly and in pairs and did not form spores. The growth on agar was fairly abundant, moist, and the edges entire. It produced turbidity but no scum in broth. It did not liquefy gelatin. Milk was scidified, coagulated and slowly peptonized. Acid and gas were produced in dextrose, lactose, saccharose and mannite. The organism produced creatinine (Salkowski's test), but not indol in Dunham's peptone solution. Broth containing any one of the above sugars or mannit was rendered quite syrupy after three or four days growth of this bacillus.

This organism is probably identical with the *Bacterium viscosum* of Van Laer. Its growth in the pop was the cause of its viscidity.

From the above brief study it is evident that ordinary bottled pop may be by no means free from bacteria; that dangerous bacteria, e. g., streptococci, may be present; and that the ropiness or viscidity of this pop was due to the growth of a bactarium probably identical with *Bacterium viscosum.*

MAILING OUTFITS.

The number of outfits of each kind sent to physicians and health officers during the year and in each month is shown in Table 48.

TABLE 48.

Showing Number and Kinds of Mailing Outfits Sent to Physicians and Health Officers.

MONTH.	Sputum.	Diphtheria.	Widal.	Malaria.	Special.	Bile. Media.	Total.
October	653	5,845	242	13	57	....	6,810
November	500	3,141	111	19	64	....	3,835
December	354	1,315	100	21	24	....	1,814
January	307	434	138	33	66	....	978
February	347	278	107	10	30	....	772
March	438	229	128	61	90	....	946
April	469	282	109	18	34	9	921
May	491	134	149	42	100	29	945
June	368	79	111	29	90	55	723
July	692	75	137	27	70	88	1,089
August	351	143	207	46	65	40	852
September	692	746	429	36	63	13	1,979
Total	5,662	12,692	1,968	355	753	234	21,664

INDIANA STATE BOARD OF HEALTH

SEVENTH ANNUAL REPORT

OF THE

Chemical Division of Laboratory of Hygiene

FOR THE

YEAR ENDING SEPTEMBER 30, 1912

H. E. BARNARD, Ph. D.

Chemist in Charge and State Food and
Drug Commissioner

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SEVENTH ANNUAL REPORT OF THE CHEMICAL DEPARTMENT OF THE LABORATORY OF HYGIENE.

H. E. BARNARD PH. D., CHEMIST.

For seven years the State Board of Health has referred to the Chemical Department of its Laboratory of Hygiene all matters which have to do with the enforcement of the Food and Drug Law, the pollution of streams, and the protection and purification of water supplies. The work of the year as herein reported has continued along the lines followed with success since the passage of the laws which made the Laboratory possible, and the records here set out are but an amplification of those already issued. As in the past, the department has received the hearty support of the press and the people of the State, and in no small degree finds its field for usefulness open before it because of this co-operation, which gives publicity to the work and an intelligent appreciation of its purpose.

This report is but a summary of the work of the year. The results of the laboratory work, and the data collected by inspectors, are analyzed and in so far as possible interpreted that the layman may have access to them. The value of the report is evidenced both by the ease in which the data can be understood and by the figures collected for the use of investigators in similar fields.

The department has been fortunate in retaining with but few changes, the corps of chemists, clerks and inspectors who have so largely contributed to its development.

Mr. I. L. Miller, appointed chief drug chemist at the time of the passage of the Food and Drug Law, resigned to accept a more lucrative position.

Mr. Wm. D. McAbee, a former chemist of the department, has been appointed to the head of the Drug Laboratory, where he has continued the efficient work of his predecessor.

H. E. Bishop has continued his work as food chemist, and by his close application and skillful technique has made the reports from his laboratory of value, both in the enforcement of the Pure Food Law and the recording of new data on the composition of foods. Mr. J. C. Diggs has been associated with him as assistant food chemist.

Jay Craven, Chief of the Water Laboratory and Engineer to the department, has done most valuable work both in the laboratory and in the field surveys which he has carried on. A report of his work on the Wabash River is recorded elsewhere, as well as the sanitary surveys and installations which he has made in different parts of the State. Mr. Cullen Thomas, A. R. Tucker, Leon Logan and Willard Hutchens, as undergraduate assistants, have given excellent service to this department, and have made possible the extensive surveys, which without their uncompensated service could not have been completed.

Mr. Allen Lloyd served the Laboratory during the summer months as assistant chemist, and his capacity for analytical research, and conscientious application has earned for him an appointment as assistant chemist in the Drug Laboratory.

Each year the Laboratory records have become more valuable. The department is fortunate in having retained Miss Edith Hoffman as the efficient head of the clerical force. Her services are appreciated by chemists and inspectors alike.

Mrs. Florence Vollrath has continued her faithful service.

The reward for technical service is constantly becoming greater, and chemists in industrial fields are earning far more than those who continue in the public service. It is unfortunate that those who serve the city and State where the opportunity to rise to the front rank of their profession is limited, and where their field of labor is restricted, are not paid salaries more nearly commensurate with the services they render. It is to be hoped that in the future the trained public servant will be equally well paid with those who are engaged in the industries.

The Food and Drug inspection force continues as first organized in 1907, except that John Owens, after four years of most efficient service has been transferred to another department of the State Board of Health, C. L. Hutchens filling his place in the corps. This change has made necessary some re-arrangement of the inspection work. A. W. Bruner continues as heretofore in charge of the southern counties. B. W. Cohn, of Indianapolis and central Indiana; Frank W. Tucker, for some time in charge of the work in northern Indiana, has taken over much of the territory formerly cared for by Mr. Owens in the western part of the

State. Mr. John T. Willett and Mr. C. L. Hutchens are doing effective work in the northern and eastern counties.

The work of the inspectors has gone forward without friction and each year has produced more satisfactory results. While nominally the inspectors are field men, they are more and more coming to find their greatest service in the education of the health officer and the consumer.

It is quite impossible for these five field workers to keep in close touch with all of the conditions imposed by the many laws under which they work. The dairy situation alone, if it were controlled as it might well be by centralized authority, would require at least a hundred inspectors. The drug trade might well demand an inspection service. The bakers of the State find argument in favor of bakery inspectors. The canners, with their rapidly developing industry, are calling for assistance. The meat supply as it is produced in the local abattoirs and country slaughter houses is wholly uninspected. Indeed, every branch of the business of producing and handling food stuffs may well be supervised by experts. The State can never hope to furnish trained inspectors in all of these branches, but it can continue and enlarge with most gratifying results the character of the work now in hand.

The inspectors, working through the local health authorities, discussing the great questions of sanitation and food adulteration before women's clubs, teachers' meetings, wherever consumers are gathered, by attending conventions, by utilizing the ever willing columns of the press and by cultivating wherever they go the sympathy and support of those among whom they work, can so popularize the laws they enforce that it will not longer be necessary to compel obedience to their mandates. Already food adulteration as it was practiced when the laboratories were opened is rarely met with. Each year the inspector finds it increasingly difficult to collect sufficient samples for the use of the chemists at the laboratory. Each year false labels, exaggerated statements of composition and quality, become less, and with every visit the inspector finds the citizens of the towns he visits more interested in his work and more willing to assist him.

RESULTS OF ANALYSES OF FOOD SAMPLES.

During the year 2,050 samples of food collected by inspectors or sent in by health officers and interested consumers, have been examined at the Laboratory. Of this number 1,504 samples were legal and 546 illegal, either because they contained ingredients not allowable under the law, such as chemical preservatives, foreign colors or make-weights, or were misbranded or otherwise mislabeled. The percentage of adulteration of food stuffs as shown by the year's work is 26.6. The percentage of adulteration for 1906 was 42.3; for 1907, 20.2; for 1908, 25.7; for 1909, 33.8; for 1910, 30.9; for 1911, 32.7. Upon this basis of comparison the results reported for the year are an improvement over preceding years. This improvement is the more evident when it is noted that only articles which are suspected of being illegal are now collected.

The inspector does not, as he once did, send in miscellaneous samples with the idea that some of them may be impure or misbranded. Long familiarity with the markets have taught him that at least 95 per cent. of all the goods he inspects are made by conscientious manufacturers who have used every effort to produce goods of high quality, and to label them in compliance with every provision of the law, and it is among the 5 per cent. of goods, the brands of which he does not recognize, that he must look for doubtful samples. In view of this fact, after assuming that 26.5 per cent. of food stuffs are adulterated, we are safe in our belief that not more than 1 per cent. are illegal. The difference between the conditions of today and those obtaining when the laboratories were opened, when 42 per cent. were reported as impure, is, we believe, a complete proof of the value of pure food legislation adequately enforced.

The following summary gives in detail an outline of the work done and the results contained in the analyses.

RESULT OF ANALYSES OF FOOD SAMPLES FOR THE YEAR

October, 1911, to October, 1912.

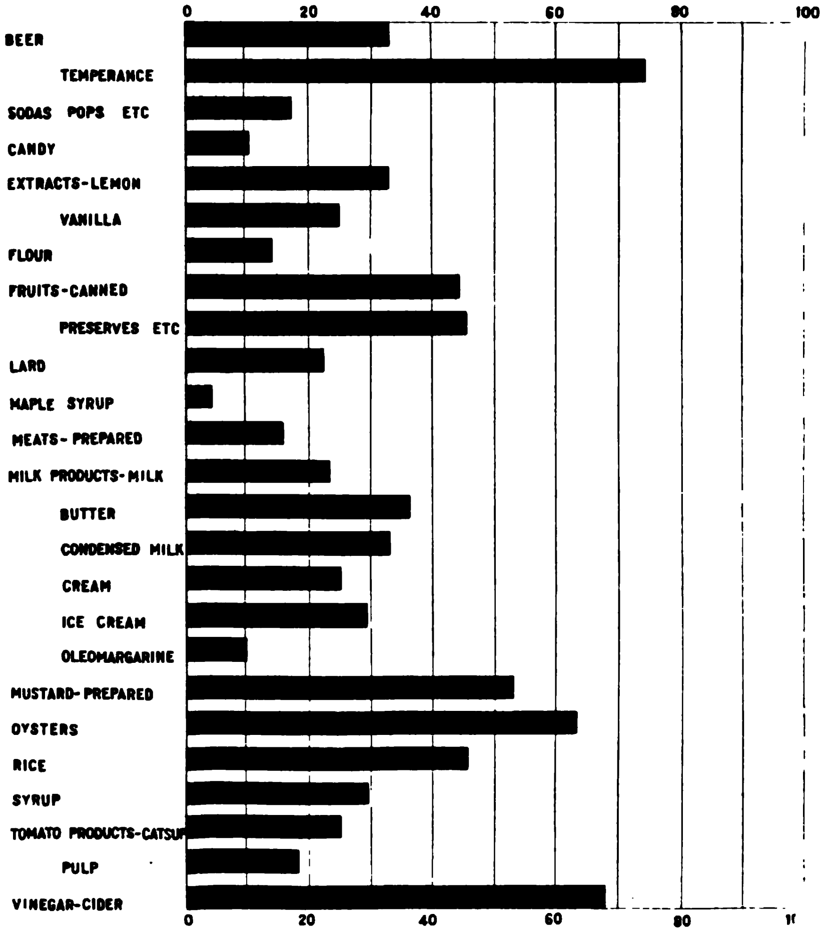
ARTICLES EXAMINED.	Legal.	Illegal.	Total.	Per Cent. Adulterated.
Beverages:				
Beer	2	1	3	33.3
Beer, Temperance	11	32	43	74.4
Sodas, Pops, etc	29	6	35	17.1
Whiskey	13	2	15	13.3
Wine	3	....	3	....
Candy	17	2	19	10.5
Coffee	11	....	11	....
Cream of Tartar	2	....	2	....
Extracts:				
Lemon	14	7	21	33.3
Vanilla	18	6	24	25.0
Flour	18	3	21	14.3
Fruit Products:				
Butter	3	4	7	57.1
Canned	15	12	27	44.4
Preserves, Jellies and Jams	6	5	11	45.4

ANALYSES OF FOOD SAMPLES—Continued.

Articles Examined.	Legal.	Illegal.	Total.	Per Cent. Adulterated.
Gelatin	8	....	8	....
Honey	6	....	6	....
Horseradish	4	....	4	....
Lard	17	5	22	22.7
Maple Syrup	21	1	22	4.5
Meats, Prepared	72	13	85	15.3
Milk Products:				
Butter	40	23	63	36.5
Cheese	6	....	6	....
Condensed Milk	4	2	6	33.3
Cream	30	10	40	25.0
Milk	767	235	1,002	23.4
Ice Cream	113	46	159	28.0
Mother's Milk	8	....	8	....
Oleomargarine	10	1	11	9.0
Mince Meat	3	1	4	25.0
Miscellaneous Foods	28	6	34	17.6
Mustard, Prepared	18	20	38	52.6
Oysters	7	12	19	63.1
Oyster Liquor	2	5	7	71.1
Rice	6	5	11	45.5
Spices	7	2	9	22.2
Sugar	8	....	8	....
Syrups	24	10	34	29.4
Tomato Products:				
Catsup	30	10	40	25.0
Pulp	36	8	44	18.1
Puree	4	....	4	....
Vegetables, Canned	34	....	34	....
Vinegar:				
Cider	24	51	75	68.0
Distilled	5	....	5	....
Total	1,504	546	2,050	26.6

PERCENTAGE OF ADULTERATION OF FOODS IN INDIANA

1912



REPORT FROM THE FOOD LABORATORY.

DAIRY PRODUCTS.

MILK.

One thousand and two samples of milk collected by inspectors of the department and by local milk inspectors have been analyzed during the year. Of this number 952 contained more than the 3.25 per cent. of butter fat and 8.5 per cent. of milk solids required by law. This shows a percentage of adulteration or variation from standards of 4.9 per cent. Two hundred of the 1,002 samples, or 20 per cent., contained visible dirt, and for that reason were in violation of the Pure Food law. It is apparent that milk control must be directed along the lines of sanitary dairies and proper care, rather than toward the detection of added water or the removal of cream.

Our last report showed that 28 per cent. of all the samples examined contained visible dirt. While the department takes no credit for the improvement, which shows that at the present time but 20 per cent. of the milk contains cow dung or other forms of filth, it is apparent that greater familiarity with the stringent laws regulating their industry will finally bring dairymen to exercise better care over their product.

Not a single sample contained preservative or added color. The practice of using preservatives, once almost universal, is apparently abandoned, and to that extent at least the danger of an adulterated milk supply is eliminated.

MILKS—ILLEGAL.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
21504		Gary	2.6	Skimmed.
21536	C. B. Swallow	Evansville	3.6	Visible dirt present.
21538	Wm. A. Niehaus	Evansville	4.0	Visible dirt present.
21539	Evansville Pure Milk Co	Evansville	3.6	Visible dirt present.
21540	Geo. H. Stockwell. Jr	Evansville	4.1	Visible dirt present.
21541	Henry L. Nussmier	Evansville	3.7	Visible dirt present.
21542	Peter Litty	Evansville	4.6	Visible dirt present.
21543	Wilke Bros	Evansville	3.9	Visible dirt present.
21545	Fred Huck	Evansville	3.2	Visible dirt present.
21548	Geo. Hitch	Evansville	4.2	Visible dirt present.
21549	Wm. Phillips	Evansville	3.8	Visible dirt present.
21570	Richard Wilson	Peru	4.3	Visible dirt present.
21571	Richard Wilson	Peru	4.7	Visible dirt present.
21577	Bergman & Co	Peru	4.0	Visible dirt present.

MILKS—ILLEGAL—Continued.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
21612	Sent in from	South Bend	3.3	Visible dirt present.
21615	Sent in from	South Bend	4.2	Visible dirt present.
21616	Sent in from	South Bend	3.9	Visible dirt present.
21688	A. D. Wells	Elkhart	3.5	Visible dirt present.
21698	Wm. Chapin	Elkhart	5.4	Visible dirt present.
21700	Wm. Havens	Elkhart	2.9	Skimmed.
21703	D. F. Repp & Son	Huntington	4.2	Visible dirt present.
21708	John H. Bloom	Huntington	3.0	Skimmed.
21709	W. H. Meyers	Huntington	4.2	Visible dirt present.
21710	C. Vardaman	Huntington	4.0	Visible dirt present.
21711	Frunstin & Sherer	Huntington	2.0	Skimmed.
21713	E. L. Sheller	Huntington	4.2	Visible dirt present.
21715	D. H. Wilson	Anderson	3.5	Visible dirt present.
21716	T. C. Sheppard	Anderson	3.2	Milk is watered.
21717	Hart & Son	Anderson	4.2	Visible dirt present.
21718	Chas. E. Davis	Anderson	3.4	Visible dirt present.
21719	Rothrock & Short	Anderson	4.2	Visible dirt present.
21721	Gilbert Simpson	Anderson	4.0	Visible dirt present.
21723	P. S. De Bolt	Anderson	3.8	Visible dirt present.
21724	Clifford Curry	Anderson	4.2	Visible dirt present.
21725	Lloyd Baker	Anderson	5.0	Visible dirt present.
21726	R. H. Clark	Anderson	3.3	Visible dirt present.
21727	Timmons & Sons	Anderson	4.1	Visible dirt present.
21747	Sent in from	Columbus	4.0	Visible dirt present.
21748	Sent in from	Columbus	5.2	Visible dirt present.
21749	Sent in from	Columbus	9.2	Visible dirt present.
21750	Sent in from	Bloomington	4.6	Visible dirt present.
21751	Sent in from	Bloomington	4.7	Visible dirt present.
21752	Sent in from	Bloomington	2.7	Skimmed and dirty.
21754	Sent in from	Bloomington	3.8	Visible dirt present.
21755	Sent in from	Bloomington	4.8	Visible dirt present.
21756	Sent in from	Bloomington	2.4	Visible dirt present.
21757	Sent in from	Bloomington	3.4	Visible dirt present.
21758	Sent in from	Bloomington	5.6	Visible dirt present.
21759	Sent in from	Bloomington	3.9	Visible dirt present.
21760	Sent in from	Bloomington	6.0	Visible dirt present.
21761	Sent in from	Bloomington	6.3	Visible dirt present.
21763	Sent in from	Bloomington	12.0	Visible dirt present.
21766	Sent in from	Bloomington	4.2	Visible dirt present.
21769	Sent in from	Bloomington	5.1	Visible dirt present.
21771	Sent in from	Bloomington	4.4	Visible dirt present.
21772	Sent in from	Bloomington	4.3	Visible dirt present.
21773	Sent in from	Bloomington	3.7	Visible dirt present.
21774	Sent in from	Bloomington	5.0	Visible dirt present.
21776	Sent in from	Bloomington	4.6	Visible dirt present.
21785	Mae Taylor	Kokomo	4.2	Visible dirt present.
21788	Harry L. Draper	Kokomo	4.5	Dirt present.
21826	Sent in from	Bloomington	2.3	Skimmed and dirty.
21827	Sent in from	Bloomington	6.0	Visible dirt present.
21828	Sent in from	Bloomington	4.6	Visible dirt present.
21830	Sent in from	Bloomington	4.4	Visible dirt present.
21834	Sent in from	Bloomington	9.6	Visible dirt present.
21842	Jno. Evans	Muncie	4.9	Visible dirt present.
21845	N. H. Pike	Muncie	4.3	Visible dirt present.
21850	A. Yingling	Muncie	3.6	Visible dirt present.
21851	C. Steck	Muncie	4.3	Visible dirt present.
21927	Ray Rodgers	Bloomington	4.5	Visible dirt present.
21941	Geo. Jacobs	Mishawaka	4.1	Visible dirt present.
21944	M. F. Crofoot	Mishawaka	3.8	Visible dirt present.
21945	J. R. Ritter	Mishawaka	3.5	Visible dirt present.
21946	B. J. Myers	Mishawaka	4.1	Visible dirt present.
21956	Merchants' Restaurant	Indianapolis	1.5	Skimmed.
21959	Tracy's Restaurant	Indianapolis	1.9	Skimmed.
21963	Busy Bee Restaurant	Indianapolis	3.8	Visible dirt present.
21964	Troy Restaurant	Indianapolis	9.5	Visible dirt present.
21980	W. Himebaugh	Goshen	4.3	Visible dirt present.
21981	J. C. Ganger	Goshen	4.2	Visible dirt present.
21987	Mrs. E. A. Rommell	Goshen	4.0	Visible dirt present.
21994	Louie Klietzke	Hammond	3.2	Skimmed.
21996	E. B. Cross	Hammond	4.7	Visible dirt present.
22015	John Powell	Hammond	3.7	Visible dirt present.
22018	W. H. Norman	Hammond	4.0	Visible dirt present.
22062	Sent in from	South Bend	4.2	Visible dirt present.
22064	Sent in from	South Bend	3.6	Visible dirt present.
22065	Sent in from	South Bend	4.3	Visible dirt present.
22066	Sent in from	South Bend	4.2	Visible dirt present.

MILKS—ILLEGAL—Continued.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
22070	Sent in from	South Bend	4.2	Visible dirt present.
22072	Sent in from	South Bend	4.7	Visible dirt present.
22136	Sent in from	South Bend	3.4	Visible dirt present.
22139	Sent in from	South Bend	3.1	Skimmed.
22140	Sent in from	South Bend	3.3	Skimmed.
22141	Sent in from	South Bend	3.2	Dirty and skimmed.
22142	Sent in from	South Bend	4.2	Dirty and skimmed.
22143	Sent in from	South Bend	3.0	Skimmed.
22144	Sent in from	South Bend	4.9	Dirty.
22169	Sent in from	Osgood	4.7	Dirt present.
22195	Sent in from	South Bend	3.2	Skimmed.
22198	Sent in from	South Bend	5.2	Dirty.
22267	Ed. Bender	Gary	3.2	Skimmed.
22268	John P. Kruger	Gary	3.8	Dirty.
22270	Peter Romanyak	Gary	3.2	Skimmed.
22354	C. E. & R. Crandall	New Albany	4.9	Dirty
22355	W. B. Bruebeck	New Albany	5.0	Dirt present.
22365	C. W. Brubeck	New Albany	4.4	Dirty.
22363	C. W. Brubeck	New Albany	5.8	Dirty.
22377	Chester Crevisloris	Marion	4.2	Dirty.
22378	Z. V. Patterson	Marion	5.2	Dirty.
22381	Abraham Fox	Marion	4.2	Dirty.
22385	Hi Hinkle	Marion	3.6	Dirty.
22382	Home Corner Grocery Co	Marion	3.5	Dirty.
22384	Hi Hinkle	Marion	2.6	Skimmed and dirty.
22389	Swayzee Market	Marion	3.1	Water added and dirty.
22507	Sent in from	South Bend	3.8	Very dirty.
22509	Sent in from	South Bend	3.0	Skimmed.
22511	Sent in from	South Bend	3.0	Skimmed.
22524	R. Shannon	Jeffersonville	4.0	Dirty.
22525	Daniel Stemler	Jeffersonville	3.8	Dirty.
22526	Long & Slosher	Jeffersonville	4.9	Dirt present.
22527	W. G. Gaddie	Jeffersonville	4.8	Little dirt present.
22528	Chas. Ruddell	Jeffersonville	4.1	Little dirt present.
22535	Frank Migas	Indiana Harbor	4.0	Dirt present.
22537	Geo. Nowakowski	Indiana Harbor	4.1	Little dirt present.
22575	Sent in from	South Bend	3.8	Little dirt present.
22577	Sent in from	South Bend	5.8	Little dirt present.
22610	Sent in from	South Bend	4.0	Dirty.
22611	Sent in from	South Bend	3.8	Dirty.
22612	Sent in from	South Bend	10.8	Dirty.
22614	Sent in from	South Bend	5.2	Dirty.
22617	Sent in from	South Bend	4.4	Dirty.
22618	Sent in from	South Bend	5.5	Dirty.
22619	Sent in from	South Bend	4.5	Dirty.
22621	Sent in from	South Bend	8.7	Dirty.
22727	Sent in from	Tell City	4.4	Much organic matter and sand present.
22729	Sent in from	Tell City	3.4	Dirty.
22676	Sent in from	Gary		Visible dirt present.
22730	Sent in from	Tell City	2.8	Watered and below standard.
22731	Sent in from	Tell City	5.4	Dirty.
22733	Sent in from	Tell City	4.0	Dirty.
22734	Sent in from	Tell City	2.7	Skimmed and dirty.
22735	Sent in from	Tell City	4.6	Dirty.
22742	Sent in from	South Bend	4.0	Dirty.
22746	Sent in from	South Bend	4.4	Dirty.
22748	Sent in from	South Bend	3.6	Dirty.
22752	Sent in from	South Bend	3.6	Dirty.
22755	Sent in from	South Bend	4.0	Dirty.
22761	Sent in from	South Bend	4.4	Dirty.
22836	Sum Bros	Washington	5.2	Dirty.
22848	Sent in from	South Bend	4.0	Dirty bottle.
22850	Sent in from	South Bend	4.0	Dirt present.
22853	Sent in from	South Bend	3.0	Sample is watered.
22855	Sent in from	South Bend	5.0	Much dirt present.
22857	Sent in from	South Bend	3.8	Dirt present.
22858	Sent in from	South Bend	3.1	Sample is watered.
22859	Sent in from	South Bend	3.6	Dirt present.
22923	E. E. McBroom	South Bend	5.0	Dirt present.
22925	A. W. Bacon	South Bend	4.4	Dirt present.
22964	Sent in from	Mishawaka	3.7	In very dirty bottle.
23078	Sent in from	Richmond	4.0	Little dirt present.
23082	Sent in from	Richmond	4.0	Little dirt present.
23083	Sent in from	Richmond	4.4	Little dirt present.

MILKS—ILLEGAL—Continued.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
23005	Sent in from	Richmond	2.9	Sample is watered.
23179	Sent in from	Indianapolis	3.1	Below standard in butter fat.
23182	Sent in from	Indianapolis		Strong odor of coal oil present.
23307	Sent in from	Dillsboro	1.4	Below standard in butter fat.
23412	Sent in from	Gary	3.4	Dirty.
23477	Sent in from	South Bend	3.0	Skimmed.
23538	Sent in from	South Bend	3.8	Dirty.
23542	Sent in from	South Bend	3.8	Dirty.
23653	Hi Avery	Noblesville	4.2	Slightly dirty.
23654	Mrs. Eranst Hollenback	Noblesville	3.0	Dirty and watered.
23655	E. Fisher & Son	Noblesville	4.6	Slightly dirty.
23771	Chapin & Ullery	Elkhart	2.9	Watered.
23755	Sent in from	Terre Haute	3.2	Much visible dirt.
23770	D. Holdeman	Elkhart	3.9	Dirty.
23773	F. H. Coffman	Elkhart	3.4	Dirty.
23774	J. H. Cliff	Elkhart	4.0	Dirty.
23775	J. D. Comstock	Bristol	3.8	Dirty.
23777	A. D. Wells	Elkhart	4.5	Dirty.
23778	S. J. Pletcher	Elkhart	4.3	Dirty.
23786	R. Trainor	Goshen	3.4	Slight visible dirt.
23791	H. Staley	Goshen	3.2	Added water and much visible dirt present.
23794	J. E. Boyts	Goshen	3.8	Slight visible dirt.
23834	L. L. Elster	Hammond	2.4	Skimmed and watered.
23851	Sent in from	South Bend	5.0	Very dirty.
23876	Frank Murawski	Gary	4.1	Very dirty.
23877	Wm. Louis Ladra	Gary	3.2	Much visible dirt.
23878	Mike Adlisich	Gary	4.5	Visible dirt.
23879	Albert Schnider	Gary	3.0	Skimmed and slight visible dirt.
23880	Mike Wukich	Gary	5.2	Visible dirt.
23881	Monas Boeble	Gary	3.2	Slightly below standard in butter fat.
23882	H. W. Theil	Gary	3.0	Added water and visible dirt.
23883	M. M. Deuchich	Gary	3.4	Visible dirt.
23884	John Kruger	Gary	4.2	Visible dirt.
23885	D. F. Bender	Gary	2.6	Dirty and skimmed.
23977	J. A. Lang Co.	Union City	4.0	Slight visible dirt.
23980	David Potter	Union City	3.6	Visible dirt.
23981	David Potter	Union City	3.4	Visible dirt.
23987	Mrs. Quincy Martin	Union City	1.5	Skimmed and dirty.
23990	Oaran Bennett	Union City	1.8	Skimmed.
24004	Sent in from	South Bend	4.6	Visible dirt present.
24006	Sent in from	South Bend	4.5	Visible dirt present.
24007	Sent in from	South Bend	5.2	Much visible dirt.
24009	Sent in from	South Bend	3.0	Added water.
24019	Sent in from	Richmond	3.2	Watered.
24021	Sent in from	Richmond	4.2	Visible dirt.
24023	Sent in from	Richmond	3.1	Watered and dirty.
24025	Sent in from	Richmond	3.6	Much visible dirt.
24033	J. H. Juday	Elwood	4.0	Visible dirt present.
24036	C. M. Knick	Elwood	3.5	Visible dirt present.
24037	Ed. Hill	Elwood	3.1	Watered.
24105	H. Hanker	Terre Haute	4.0	Visible dirt present.
24107	Henry Stoffer	Terre Haute	3.6	Visible dirt present.
24109	Fell Bros	Terre Haute	4.0	Much visible dirt present.
24112	Sherman Beall	Terre Haute	3.4	Visible dirt present.
24113	Joseph W. Smith	Terre Haute	3.9	Visible dirt present.
24116	J. M. Holland	Terre Haute	3.5	Visible dirt present.
24136	H. T. Hackleman	Connersville	4.2	Visible dirt present.
24137	Clair Smith	Connersville	5.1	Visible dirt present.
24141	W. K. Stoops	Connersville	3.7	Visible dirt present.
24142	Chas. W. Brown	Connersville	4.4	Visible dirt present.
24147	Harry O. Williams	Connersville	3.6	Visible dirt present.
24148	D. Lewis	Connersville	2.0	Added water; visible dirt present.
24149	Earl Walker	Connersville	2.7	Skimmed and visible dirt present.
24153	Sent in from	Richmond	4.6	Visible dirt present.
24155	Sent in from	Richmond	5.0	Visible dirt present.
24156	Sent in from	Richmond	4.5	Visible dirt present.

MILKS—ILLEGAL—Contiuued.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
24157	Sent in from....................	Richmond..............	3.4	Visible dirt present.
24160	Sent in from....................	Richmond..............	3.2	Added water; visible dir present.
24180	Sent in from....................	Indianapolis............	2.4	Sample was skimmed.
24190	Sent in from....................	South Bend.............	4.0	Dirty
24199	Sent in from....................	South Bend.............	4.2	Slightly dirty.

MILK ANALYSES BY CITIES AND TOWNS.

LOCALITY.	Total Number Samples.	Number Above Standard.	Number Below Standard.	Per Cent. Below Standard.	Per Cent Total Solid in Lowest Sample.	Per Cent. Fat in Lowest Sample.	Number Containing Visible Dirt.
Anderson..................	13	12	1	7.6	10.13	3.2	10
Bedford....................	4	4	....	....	....	....	....
Ben Davis.................	1	1	....	....	....	....	....
Bloomington..............	46	43	3	6.5	11.29	2.3	25
Brazil......................	10	10	....	....	....	....	....
Bristol.....................	1	1	....	....	....	....	1
Carmel.....................	2	2	....	....	....	....	....
Columbus..................	5	5	....	....	....	....	3
Connersville..............	10	8	2	20.0	9.99	2.0	6
Decatur....................	9	9	....	....	....	....	....
Dillsboro..................	1	....	1	100.0	....	1.4	....
Elkhart.....................	29	27	2	6.9	10.24	2.9	7
Elwood.....................	16	15	1	6.2	10.61	3.1	2
Evansville.................	12	11	1	8.3	12.12	3.2	10
Frankfort..................	4	4	....	....	....	....	....
Gary........................	31	24	7	22.5	11.11	2.6	13
Goshen.....................	22	21	1	4.5	10.95	3.2	6
Greenfield.................	1	1	....	....	....	....	....
Hammond..................	14	12	2	14.2	10.46	2.4	3
Huntington................	14	12	2	14.2	10.63	2.0	4
Indianapolis..............	31	26	5	16.1	10.57	1.5	3
Indiana Harbor...........	4	4	....	....	....	....	2
Jeffersonville............	9	9	....	....	....	....	5
Kokomo....................	10	10	....	....	....	....	2
Lafayette..................	8	8	....	....	....	....	....
Lawrenceburg.............	6	6	....	....	....	....	....
Lebanon....................	3	3	....	....	....	....	....
Logansport................	10	10	....	....	....	....	....
Madison....................	12	12	....	....	....	....	....
Marion......................	12	10	2	16.6	....	2.6	....
Mishawaka................	36	36	....	....	....	....	5
Muncie.....................	26	26	....	....	....	....	4
New Albany...............	9	9	....	....	....	....	4
Noblesville...............	4	3	1	25.0	9.86	3.00	3
Osgood.....................	1	1	....	....	....	....	1
Pendleton.................	2	2	....	....	....	....	....
Peru........................	11	11	....	....	....	....	3
Plymouth..................	1	1	....	....	....	....	....
Portland...................	1	1	....	....	....	....	....
Richmond..................	32	28	4	12.5	9.90	2.90	11
Rochester.................	1	1	....	....	....	....	....
Rushville..................	10	10	....	....	....	....	....
Seymour...................	14	14	....	....	....	....	....
South Bend...............	441	431	10	2.2	11.01	3.0	48
Tell City..................	9	7	2	22.2	9.94	2.7	6

MILK ANALYSES BY CITIES AND TOWNS—Continued.

LOCALITY.	Total Number Samples.	Number Above Standard.	Number Below Standard.	Per Cent. Below Standard.	Per Cent. Total Solids in Lowest Sample.	Per Cent. Fat in Lowest Sample.	Number Containing Visible Dirt.
Terre Haute...............	29	28	1	3.4	....	3.2	7
Tolleston..................	3	3	....	....	....	....	....
Union City................	11	9	2	18.1	10.38	1.5	5
Vincennes.................	7	7	....	....	....	....	....
Washington...............	4	4	....	....	....	....	1
Fifty cities	1,002	952	50	4.9	....	....	200

THE SOUTH BEND MILK SUPPLY.

In no city in the State have health officers shown more interest in the improvement of their milk supply than at South Bend. In an endeavor to arouse the dairymen of that city to an appreciation of the necessity of selling clean milk, the Board of Health, after several conferences, arranged with the milk dealers that it would send frequent samples of milk to the State Laboratory for analyses, and that no prosecution should be brought by reason of the presence of dirt until the dairymen had discovered the reasons for their shortcomings and had an opportunity to eliminate them. As a result of this feasible agreement between the health board and the dairymen twenty-five sets of samples were sent to the laboratory during the months of January, February and March. Of the 415 samples submitted, 353 were legal and 62 were illegal, in 51 cases because of the presence of dirt, in 6 cases because of a low butter fat content, in 3 cases because of added water, and in 2 cases because the samples were both skimmed and dirty. At the beginning of the investigation the presence of dirt was much more common than with the last samples sent in, the dairymen evidently having learned how to produce a more cleanly product.

While it is not advisable to offer immunity from prosecution as an award for co-operation, yet in this instance we believe the improvement in the milk supply of South Bend was in no small measure due to the fact that the dairymen and the health officers were able to meet upon common ground and so to plan a work for better conditions without having constantly in sight the specter of a possible prosecution.

MILKS SENT IN FROM SOUTH BEND BY CHAS. VAN LAKE, MILK INSPECTOR.

Lot No.	Total.	Legal.	Illegal.	Dirty.	Below Standard.	Skimmed.	Skimmed and Dirty.	Watered.
1	14	11	3	3	....	....	....	....
2	14	14	....	....	....	....	....	....
3	13	13	....	....	....	....	....	....
4	28	22	6	6	....	....	....	....
5	28	21	7	3	....	3	1	....
6	31	25	6	5	....	....	1	....
7	14	9	5	5	....	....	....	....
8	21	21	....	....	....	....	....	....
9	13	13	....	....	....	....	....	....
10	26	21	5	3	2	2	....	....
11	13	13	....	....	....	....	....	....
12	22	14	8	8	....	....	....	....
13	28	22	6	6	....	....	....	....
14	11	11	....	....	....	....	....	....
15	14	7	7	5	2	....	....	2
16	14	14	....	....	....	....	....	....
17	10	10	....	....	....	....	....	....
18	14	13	1	....	1	1	....	....
19	11	9	2	2	....	....	....	....
20	12	12	....	....	....	....	....	....
21	12	11	1	1	....	....	....	....
22	14	14	....	....	....	....	....	....
23	14	10	4	3	1	....	....	1
24	13	12	1	1	....	....	....	....
25	11	11	....	....	....	....	....	....
Total	415	353	62	51	6	6	2	3

CREAM.

Forty samples of cream were analyzed during the year, of which 10, or 25 per cent., were illegal. Eight of the illegal samples were so classed because the butter fat content was less than the 18 per cent. required by law. Two samples, having a fat content of 24.4 per cent., respectively, contained visible dirt. The lowest fat content noted during the year was 8.8 per cent.

CREAM—LEGAL.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
21405	....	South Bend	40.8	No visible dirt; no formaldehyde.
21406	....	South Bend	35.2	No formaldehyde; no visible dirt.
21857	John L. Miller	Bedford	19.2	No visible dirt.
21863	F. H. Hoover	Bedford	26.8	No visible dirt.
21925	Arbutus Dairy Co	Bloomington	19.6	
22366	C. W. Brubeck	New Albany	18.4	
22388	Swaysee Market	Marion	18.0	
22475	Blue Valley Creamery Co	Indianapolis	....	
22481	....	Tolleston	24.6	
22533	J. F. Speeth	Jeffersonville	18.0	
22713	....	Huntington	24.0	No formaldehyde.
22821	....	Seymour	22.2	
22822	....	Hammond	20.4	
22823	....	Hammond	18.4	
22908	....	Plymouth	22.8	
22910	....	Indianapolis	26.8	

CREAM—LEGAL—Continued.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
23020		Albany	33.2	
23164	Sent in from	Vincennes	26.0	
23169	Sent in from	Vincennes	20.8	
23180		Indianapolis	20.0	
23265		Rochester	23.6	
23266		Rochester	29.0	
23372	C. C. McIntosh	Terre Haute	19.0	
23390	Sent in from	South Bend	38.8	
23421	D. F. Maish	Frankfort	23.6	
23423	O. W. McKinsey	Frankfort	23.2	
23652	Conant & Son	Noblesville	25.6	No visible dirt.
23929	Richard Carpenter	Logansport	22.2	
24090	J. D. Carlisle	Indianapolis	18.8	No formaldehyde; no visible dirt.
24104	Johnson & Co	Indianapolis	18.0	No visible dirt; no formaldehyde.

CREAM—ILLEGAL.

Laboratory No.	Manufacturer or Dealer.	Where Collected.	Per Cent. of Fat.	Remarks.
21629	Henry Herman	Evansville	13.2	Low in fat.
21630	Geo. Buchenberger	Evansville	8.8	Low in fat.
21631	Jac. Herman	Evansville	15.4	Low in fat.
21634	Schlumpf & Schleiter	Evansville	19.0	Visible dirt present.
21824		Bloomington	12.0	Low in fat and visible dirt present.
21837	Burr McCauley	Warsaw	24.4	Visible dirt present.
21849		Muncie	12.0	Low in fat.
22387	Eshelman & Derr	Marion	15.2	Low in fat.
22909		Plymouth	15.2	Low in fat.
24098	A. M. Hirsh	Indianapolis	16.0	Below standard.

BUTTER.

Sixty-three samples of butter were analyzed, of which 40 were legal and 23, or 36.5 per cent., illegal. Three of the samples purchased for butter upon analysis proved to be oleomargarine. The sale of oleomargarine, while not regulated by specific law as is the case in many of the States, is in most instances conducted without any attempt to deceive the purchaser. Nineteen of the illegal samples contained moisture in excess of 16 per cent. Four samples contained more than 50 per cent. These samples were what is known as merged butter; that is, a product made by mixing butter and milk in the proportion of one pound of butter to a pint of milk in a mixing apparatus which, when rapidly worked, forms a heavy emulsion which closely resembles butter in appearance and flavor. The use of the butter merger is increasing. While the private family who may wish to make one pound of butter spread as far as two, can perhaps find an excuse for this kind of practice, the boarding house or restaurant keeper who serves the product is in violation not only of the state food law, but of the federal laws regulating the manufacture and sale of adulterated butter.

Many of the high moisture content butters are country butters; that is, butters made at the home by persons who are either untrained in the work or unequipped with suitable conveniences for making a satisfactory butter. The economic loss to the farmers of Indiana because of their inability to make a salable butter can only be estimated in millions of dollars. Their product is frequently so poor that it can only be sold as stock to be worked over at the renovated-butter factory. When the product of the farm dairy is properly handled, the return per pound of butter fat will in many instances be twice what it is at present. A brief study of the composition of country butter made by James Brown, Ph. D., will be found on p. 126.

BUTTER—LEGAL.

Laboratory No.	Retailer.	Collected.	Butyro at 40° C.	Reichert-Meissl No.	Moisture.
21286	Ella Russell	Indianapolis	43.1	26.17	11.54
21287	Nance ———	Brazil	43.2	27.38	10.05
21423	W. N. McGraw	Tipton	44.6	25.56	13.54
21443	....	Ft. Wayne	43.6	26.37	11.63
21739	....	Elkhart	43.0	26.84	12.22
21869	G. S. Goebel	South Bend	44.2	24.32	6.00
22209	Bishop Brothers	Lawrenceburg	42.0	26.90	10.61
22514	....	Muncie	43.0	28.92	12.13
22515	....	Indianapolis	42.5	....	....
22584	....	Indianapolis	42.0	25.20	10.89
22585	....	Ft. Wayne	41.1	27.10	....
22629	E. V. Barney	Marion	41.8	28.64	13.47
22675	J. B. Gibboney	Indianapolis	40.5	28.17	14.50
22707	R. G. Caylor	Noblesville	41.7	26.70	13.99
22711	Thomas Roberts	Fishers	42.0	27.65	14.53
22771	Mrs. M. B. Baker	Indianapolis	42.4	26.59	15.45
22772	H. Volnits	Indianapolis	42.0	28.01	14.25
22773	E. Redmann	Indianapolis	42.6	23.28	15.13
22774	Mrs. Wm. Ledmeyer	Indianapolis	41.5	28.41	13.30
22775	J. H. Fodrea	Indianapolis	42.4	24.18	9.12
22776	J. Garner	Indianapolis	41.8	28.73	15.06
22777	W. A. Lewis	Indianapolis	41.5	29.74	14.75
22778	H. H. Poulter	Indianapolis	42.3	28.57	13.56
22779	R. C. Cross	Indianapolis	42.5	25.80	14.77
22781	H. R. Lebean	Indianapolis	41.0	24.17	9.45
22782	Mrs. Woodruff	Indianapolis	42.1	26.30	10.19
22783	Girls School	Clermont	42.0	26.21	10.12
22878	Mrs. Woodruff	Indianapolis	43.6	22.74	13.80
22899	C. W. Clifton	Indianapolis	41.5	26.68	13.20
22952	....	Indianapolis	40.6	32.56	6.76
23029	Holblick Bros	Lafayette	42.4	25.26	16.00
23108	....	Gary	42.4	....	....
23109	....	Gary	42.0	22.42	....
23110	....	....	42.1	22.70	....
23207	....	Kendallville	42.3	....	....
23249	....	Indianapolis	42.0	....	....
23284	....	Fort Wayne	42.7	24.80	....
23743	L. L. Allen	Rushville	42.9	26.55	14.09
23861	Titus & Inlow	Crawfordsville	41.7	25.37	13.57
23863	Titus & Inlow	Crawfordsville	42.3	28.43	11.02

BUTTER—ILLEGAL.

Laboratory No.	Retailer.	Collected.	Butyro at 40° C.	Reichert-Meissl No.	Moisture.	Remarks.
21630	E. V. Barney	Marion	40.5	28.72	16.79	
21684	Ella Russell	Indianapolis	50.2	1.29		Is oleo.
22227		Indianapolis	41.5	25.91	19.96	
22228		Vernon	42.0	30.30	51.09	
22440		Vernon	41.5	28.23	58.54	Is merged.
22280		South Bend	50.4	4.30	11.80	Is oleo.
22632	Hi Hinkle	Marion	42.0	26.20	51.54	
22641	L. D. Johnson	Marion	41.6	27.30	20.08	
22708	R. G. Caylor	Noblesville	42.0	28.46	31.66	
22709	A. R. Couden	Noblesville	43.3	21.33	16.82	Low in fat.
22780	L. Latker	Indianapolis	41.8	28.74	18.81	Low in fat.
22800	A. D. Couden	Noblesville	43.0	27.19	20.00	
22801	Will Hayes	Noblesville	42.5	27.14	23.28	
22874	Clifford & Wingerd	Delphi	43.3	25.74	16.37	Low in fat.
22897	Ramsey Bros	Indianapolis	42.4	34.60	28.55	
22898	C. L. Hammer	Indianapolis	43.0	28.47	17.88	
22900	Mrs. Wickers	Indianapolis	42.7	26.70	21.89	
22931		Marion	41.3	22.30	53.70	
23745	A. L. Aldridge	Rushville	43.6	25.15	15.43	Below standard in butter fat.
23747	Fred Cochran	Rushville			16.77	Low in fat.
23862	Titus & Enlow	Crawfordsville.	41.8	25.38	32.42	Low in fat.
23898	J. A. Lane	Markle	42.1	21.16	29.71	Low in fat.
23976		Indianapolis	51.0	1.40	12.00	Is oleo.

CHEESE.

But six samples of cheese were analyzed during the year, and every sample was found to be legal.

CHEESE—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Fat.	Remarks.
22297	M. B. Morgan, W. Lafayette	48.00	No borax present.
22624	E. V. Barney, Marion	54.18	No borax present.
22625	E. V. Barney, Marion	69.68	No borax present.
22626	E. V. Barney, Marion	52.99	No borax present.
22633	Hi Hinkle, Marion	52.78	No borax present.
22710	Eller & Beaver, Fishers	53.03	No borax present.

CONDENSED MILK.

The five samples of condensed milk analyzed were all classed as legal. In no case did the fat content fall below 8 per cent. and the total solids were sufficiently high to indicate satisfactory concentration.

CONDENSED MILK—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Collected.	Fat Per Cent.	Solids Per Cent.	Ash Per Cent.	Fat Solids, Ratio.	Remarks.
21524	Whiteland Canning Co.	Whiteland	8.4	26.96	1.40		
23563		Indianapolis	8.0	27.80	1.84		
23564		Indianapolis	8.0	28.28	1.80		
23565		Indianapolis	8.0	27.88	1.80		

CONDENSED MILK—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Collected.	Fat Per Cent.	Solids Per Cent.	Ash Per Cent.	Fat Solids, Ratio.	Remarks.
21523	Van Camp...........	Martinsville...	8.12	24.80	1.305	....	Low in solids.
21525	Sent in from.........	Morristown...	7.05	58.96	2.060	....	Low in fat.

MOTHER'S MILK.

Although the analysis of mother's milk is not contemplated in the enforcement of the Pure Food Law, occasional samples submitted by physicians have been analyzed as a matter of courtesy. The composition of the samples submitted varies greatly both as to fat and protein content.

MOTHER'S MILK.

Laboratory No.	Sent In by	Per Cent. of Fat.	Per Cent. of Protein. N x 6.25.	Remarks.
21683	Dr. R. L. Wade, Fremont........	2.00	1.645	Low grade.
21822	Dr. C. E. Hull, Shannondale.....	3.80	....	....
22330	Dr. Lillian B. Mueller, City......	2.00	1.715	Carbohydrates 3.1%; Sp. gr. 1.028.
22810	J. F. Ginn, Spiceland............	2.80	1.155	Slightly low in fat content.
22811	Mrs. C. C. Huston.............	3.30	1.435	Normal composition.
23966	Mr. Heign, Indianapolis.........	4.37	1.780	....
23970	Dr. Jeagyer, Indianapolis........	1.62	....	Decidedly low in fat.
24203	Sent in from Indianapolis........	3.95	....	....

ICE CREAM.

One hundred fifty-nine samples of ice cream were analyzed. Of this number 113 were legal and 46, or 28.9 per cent., illegal. In two instances the illegal samples contained less than the 8 per cent. of butter fat required by standard. In every instance the samples were in addition dirty or contained artificial color not declared on the label.

ICE CREAM—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Per Cent. of Fat.
21407	Sent in from..........................	South Bend..................	12.4
21551	Christian Bros........................	Evansville....................	10.4
21554	John C. Stark.........................	Evansville....................	9.6
21557	G. S. Kolius..........................	Evansville....................	14.2
21558	Fred Miller...........................	Evansville....................	13.0
21559	E. H. Myers...........................	Evansville....................	13.6
21560	Evansville Pure Milk Co...............	Evansville....................	8.0
21597	Gust. A. Schimpff.....................	Jeffersonville................	9.2

ICE CREAM—LEGAL—Contindeed.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Per Cent. Fat.
21601	John F. Speith	Jeffersonville	9.6
21602	F. A. Mason	Jeffersonville	9.6
21632	Henry A. Strickler	Evansville	8.8
21633	Purity Ice Cream Co	Evansville	9.6
21856	John L. Miller	Bedford	10.2
21862	John W. Hoover	Bedford	9.6
21924	Arbutus Dairy Co	Bloomington	8.0
21936	Geo. Politsan	Bloomington	9.6
21950	Purity Shop	Mishawaka	10.0
21952	L. J. Soliva Co	Mishawaka	8.0
21985	J. Polesoes	Goshen	8.8
21986	T. Machuris	Goshen	10.2
22214	Ernst Kestner	Lawrenceburg	8.6
22215	W. B. Galimore	Lawrenceburg	8.8
22205	Herman Klepper	Lawrenceburg	9.6
22275	Lincoln & Eleopulas	Gary	9.2
22276	Magrames Bros	Gary	9.0
22277	J. P. Orphan & Co	Gary	11.2
22529	Gust. A. Schimpff	Jeffersonville	10.8
22835	Peter J. Harritos	Washington	9.2
23088	Sent in from	Richmond	13.0
23089	Sent in from	Richmond	8.6
23090	Sent in from	Richmond	8.6
23165	Planke Bros	Vincennes	18.6
23166	W. W. Cassell	Vincennes	15.2
23167	Zaraofotis Bros	Vincennes	9.6
23168	Vincennes Cond. Milk Co	Vincennes	9.2
23189	Sent in from	Rochester	9.2
23190	Sent in from	Rochester	10.8
23191	Sent in from	Rochester	8.6
23197	Florian Dovichi	Rochester	10.0
23203	Alex. Rhu	Rochester	9.2
23230	Sent in from	South Bend	8.2
23231	Sent in from	South Bend	8.0
23234	Sent in from	South Bend	8.6
23236	Sent in from	Indianapolis	8.2
23268	Sent in from	Rochester	8.2
23269	Sent in from	Rochester	9.2
23270	Sent in from	Liberty	15.6
23330	Sent in from	South Bend	12.8
23331	Sent in from	South Bend	10.4
23389	Sent in from	South Bend	12.0
23390	Sent in from	South Bend	14.2
23424	Cushwa Bros	Frankfort	8.2
23425	Crane Bros	Frankfort	9.2
23426	Crane Bros	Frankfort	9.0
23429	Geo. W. Billart	Chrisney	8.8
23458	E. J. Lagee	New Albany	8.0
23459	Mason Rue	New Albany	8.4
23463	David Bruebeck	New Albany	9.2
23464	Curtis Purvis	New Albany	8.2
23465	P. J. Pfeffer	New Albany	8.4
23467	Geo. Demas	New Albany	8.0
23468	Bird & Stratton	New Albany	9.2
23469	John S. Haffen	New Albany	10.0
23543	Sent in from	South Bend	9.0
23546	Sent in from	South Bend	9.0
23557	M. E. Miller & Son	Lebanon	12.4
23558	Peters & Berryhill	Lebanon	14.0
23559	Fred Coombs	Lebanon	8.4
23657	T. Souters	Noblesville	12.0
23658	Ira Baldwin	Noblesville	8.0
23659	John Dodd	Noblesville	12.0
23718	D. Contos	Mishawaka	11.0
23719	L. J. Solari & Co	Mishawaka	9.0
23720	C. R. Saltgiver	Mishawaka	17.6
23734	Nance Sanitary Co	Brazil	9.2
23736	Joe Spugnardi	Brazil	9.2
23763	Sent in from	Terre Haute	9.2
23766	Sent in from	Terre Haute	8.0
23779	Michels Bros	Elkhart	8.6
23780	Leininger Ice Cream Co	Elkhart	10.4
23781	Peter Polozoes	Elkhart	9.4
23789	H. Leining	Goshen	8.0
23792	Machures Bros	Goshen	11.6

ICE CREAM—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Per Cent. Fat.
23838	Ben Dapolai	Hammond	8.0
23839	Joe Nutini	Hammond	10.8
23840	H. Bicknell	Hammond	10.6
23841	M. Doviciki Co	Hammond	8.6
23842	Woodhull Ice Cream Co	Hammond	8.0
23843	Sbeagia & Co	Hammond	8.0
23844	Brahos Bros	Hammond	9.2
23859	Sent in from	South Bend	8.4
23860	Sent in from	South Bend	10.8
23886	Magic City Ice Cream Co	Gary	8.0
23887	C. E. Hall	Gary	8.6
23939	W. H. Porter	Logansport	10.0
23940	J. Pantastn	Logansport	9.6
23954	Sent in from	South Bend	14.8
23956	Sent in from	South Bend	10.0
23986	James E. Stewart	Union City	9.6
24028	Sent in from	Richmond	11.6
24029	Sent in from	Richmond	9.6
24038	F. W. Green	Elwood	8.0
24074	Sent in from	South Bend	8.8
24076	Sent in from	South Bend	9.6
24077	Sent in from	South Bend	10.0
24145	Wm. Dorris	Connersville	8.0
24163	Sent in from	Richmond	8.4
24164	Sent in from	Richmond	11.2
24165	Sent in from	Richmond	8.8
24167	Chas. T. Winkler	Terre Haute	10.0
24171	E. H. Wilvert	Terre Haute	8.6
24172	James Dallus	Terre Haute	8.4
24175	Furnis Ice Cream Co	Terre Haute	8.6

ICE CREAM—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Per Cent. of Fat.	Remarks.
21550	Henry Hermann	Evansville	6.0	Below standard in butter fat.
21552	Geo. Buckenberger	Evansville	6.4	Below standard in butter fat.
21553	Schlumpf & Schlutes	Evansville	5.6	Below standard in butter fat.
21555		Evansville	5.6	Below standard in butter fat.
21556	J. Herman	Evansville	5.6	Below standard in butter fat.
21576	Rees Ice Cream Co	Peru	7.6	Below standard in butter fat.
21949	Peter Rossi	Mishawaka	5.0	Below standard in butter fat.
22278	Magic City Ice Cream Co	Gary	7.6	Below standard in butter fat.
22833	A. J. Daute	Washington	5.4	Below standard in butter fat.
22883	Sent in from	Kokomo	7.2	Low in butter fat.
23188	Sent in from	Rochester	5.8	Low in butter fat.
23201	S. M. Newby	Rochester	7.6	Low in butter fat.
23087	Sent in from	Richmond	5.2	Low in butter fat.
23355	H. L. Canter	Decatur	6.8	Low in butter fat.
23356	H. L. Canter	Decatur	5.8	Low in butter fat.
23430	Freshley Bros	Chrisney	3.2	Low in butter fat.
23457	R. L. O'Brien	New Albany	6.8	Low in butter fat.
23460	Chas. S. Goddard	New Albany	6.0	Low in butter fat.
23461	Edward M. Grauts	New Albany	6.4	Low in butter fat.
23462	Chas. H. Miller	New Albany	7.4	Low in butter fat.
23466	June Wood	New Albany	7.0	Low in butter fat.
23548	Sent in from	South Bend	7.4	Dirty and below standard.
23553	Sent in from	Indianapolis	7.8	Low in butter fat.
23656	Weldy & Jump	Noblesville	6.8	Low in butter fat.
23702	Sent in from	South Bend	7.2	Low in butter fat.
23704	Sent in from	South Bend	6.8	Low in butter fat.
23735	H. A. Gring	Brazil	6.8	Low in butter fat.
23737	Joe Spugnardi	Brazil	6.0	Low in butter fat.
23761	Sent in from	Terre Haute	6.0	Low in butter fat.
23762	Sent in from	Terre Haute	6.0	Low in butter fat
23764	Sent in from	Terre Haute	5.6	Low in butter fat.

ICE CREAM—ILLEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Per Cent. of Fat.	Remarks.
23765	Sent in from..................	Terre Haute..........	5.6	Low in butter fat.
23888	Tom Grames..................	Gary................	7.6	Low in butter fat.
23988	Corran & Horn................	Union City...........	6.8	Low in butter fat.
23989	Michael H. Hoover............	Union City...........	3.8	Low in butter fat.
24026	Sent in from..................	Richmond............	6.0	Below fat standard.
24027	Sent in from..................	Richmond............	7.2	Low in butter fat.
24039	Sneed & Co...................	Elwood..............	7.6	Below standard in butter fat.
24143	Albert Bell..................	Connersville..........	5.0	Artificial color. Low in fat.
24144	Simon Doenges................	Connersville..........	7.2	Below standard.
24146	Wm. Dorris...................	Connersville..........	7.8	Below standard.
24166	Sent in from..................	Richmond............	7.2	Below standard.
24168	H. A. Salchert...............	Terre Haute..........	6.0	Below standard.
24169	James Georgopoulos...........	Terre Haute..........	6.0	Below standard.
24170	Randall Drug Co..............	Terre Haute..........	7.2	Below standard.
24173	New Central Pharmacy.........	Terre Haute..........	6.8	Below standard.

BEER.

But three samples of beer were analyzed. One of the samples contained arsenic, evidently added for criminal purposes. The other samples were genuine beers.

BEERS.

Laboratory No.	Manufacturer or Retailer.	Alcohol.		Remarks.
		By Weight.	By Volume.	
22519	Sent in from Medaryville..........	3.87	4.84	Legal.
23044	Sent in from Wheeling............	....	....	Arsenic present, illegal.
23505	Sent in from Livonia..............	2.97	3.71	Legal.

TEMPERANCE BEERS.

Forty-three so-called temperance beers were submitted for examination, either by police officers, detectives or the inspectors of the department. Thirty-two, or 74.4 per cent., were illegal in that they contained sufficient alcohol to render them intoxicating. The liquor laws recognize five-tenths of 1 per cent. as the maximum alcoholic content permissible in a so-called temperance or non-alcoholic beverage.

Samples of Ambrosia, Maltina, Cream of Hops, Malt Ale and Hop Tonic, all sold as non-alcoholic, innocuous beverages, contained from 2 to 5 per cent. of alcohol.

TEMPERANCE BEERS—LEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Alcohol.		Remarks.
			By Weight.	By Volume.	
22907	Dry Beer	H. N. Hicks, Sullivan	.42	.52*	
22937	Dry Beer	R. E. Brown, Upland	.49	.61*	
23365	Tonica	Chas. Van Lake, South Bend	....	....	
23526	Dry Beer	Bay's Detective Bureau	....	....	
23845	Dry Beer	Geo. M. Coon, Marion	....	....	
23846	Dry Beer	Geo. M. Coon, Marion	....	....	
23873	Dry Beer	Geo. M. Coon, Marion	.12	.18	
23874	Dry Beer	Geo. M. Coon, Marion	.11	.14	
24183	Cook-Ola	Sent in from Petersburg	....	.26	
22865	Hop Cream	Sent in from Laporte	.07	.10	
22866	Hop Cream	Sent in from Laporte	.07	.10	

*Slightly high in alcohol.

TEMPERANCE BEERS—ILLEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Alcohol.		Remarks.
			By Weight.	By Volume.	
21486	Malthale	L. M. Perry, Bicknell	....	4.0	Alcohol too high.
21520	Cream of Hops.	James M. Wray, Edinburg	....	2.1	High in alcohol.
21521	Hop Tonic	James M. Wray, Edinburg	....	3.5	High in alcohol.
21628	Cream of Hops.	Temperance Beverage Co	1.60	2.04	High in alcohol.
21731	Cream of Hops.	Temperance Beverage Co	1.36	1.71	High in alcohol.
22012	Tem. Beer	Sent in from Mt. Ayr	1.30	1.64	High in alcohol.
22933	Dry Beer	Sent in from Upland	3.21	4.01	High in alcohol.
22934	Dry Beer	Sent in from Upland	3.09	3.86	High in alcohol.
22935	Dry Beer	Sent in from Upland	3.21	4.01	High in alcohol.
22936	Dry Beer	Sent in from Upland	2.73	3.41	High in alcohol.
22938	Dry Beer	Sent in from Upland	2.97	3.71	High in alcohol.
23154	Tem. Beer	Sent in from Upland	.56	.70	Misbranded.
23155	Tem. Beer	Sent in from Upland	.56	.70	Misbranded.
23156	Tem. Beer	Sent in from Upland	.56	.70	Misbranded.
23157	Tem. Beer	Sent in from Upland	.56	.70	Misbranded.
23871	Hop Tonic	G. W. Miles, Crawfordsville	....	1.22	High in alcohol.
23905	Clearo	W. W. Alston, Darlington	....	3.06	High in alcohol.
23968	Dry Beer	Sent in from Marion	3.51	4.41	High in alcohol.
23969	Dry Beer	Sent in from Marion	3.81	4.81	High in alcohol.
23997	Ambrosia	W. F. Bowles, Livonia	....	3.74	High in alcohol.
23998	Maltina	Ott E. Arnold, Livonia	....	3.88	High in alcohol.
24041	Tem. Beer	Sent in from Petersburg	....	3.21	High in alcohol.
24050	Maltina	Ed. Curry, Salem	2.13	2.69	High in alcohol.
24051	Maltina	Ed. Curry, Salem	2.79	3.51	High in alcohol.
24052	Ambrosia	Wm. D. Leonard, Salem	2.79	3.51	High in alcohol.
24053	Ambrosia	Bert Schultz, Salem	2.79	3.51	High in alcohol.
24054	Ambrosia	Mrs. Adda Hahn, Salem	2.79	3.51	High in alcohol.
24055	Maltina	Chas. Bobbs, Salem	2.19	2.76	High in alcohol.
24056	Maltina	Wm. H. Norris, Salem	2.19	2.76	High in alcohol.
24057	Hop Tonic	G. W. Miles, Crawfordsville	1.16	1.46	High in alcohol.
24181	Tem. Beer	Sent in from Lagrange	2.00	2.52	High in alcohol.
24184	Tem. Beer	Sent in from Petersburg	....	3.59	High in alcohol.

BEVERAGES.

Included in this list are 35 soda pops and summer drinks, of which 6, or 17.1 per cent., were adulterated. Two of the beverages, cherry cider and apple cider, contained benzoic acid and saccharin. Two were artificially colored and flavored. Another sample of apple cider had a strong odor of coal oil, evidently due to the receptacle in which it was placed.

The condition of summer beverages is greatly improved over former years, when benzoic acid and saccharin were commonly present.

BEVERAGES—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Kind of Sample.	Preservatives or Artificial Sweetener.
21195	Randall Grape Juice Co.		Grape Juice	None.
21215	J. Pantazin	Logansport	Grape Juice	None.
21216	J. Pantazin	Logansport	Grape Juice	None.
21220	E. F. Van Meter	Logansport	Grape. Artificial	None.
21514	Jacob Cramer	Gary	Cherry Cheer	None.
21515	Jacob Cramer	Gary	Strawberry Pop	None.
21516	Jacob Cramer	Gary	Lemon Soda	None.
22042	L. C. Nickolson	Indianapolis	Sweet Cider	None.
22218	W. H. Stemm	North Vernon	Beverage	None.
22219	W. H. Stemm	North Vernon	Beverage	None.
22220	W. H. Stemm	North Vernon	Ginger Ale	None.
22221	W. H. Stemm	North Vernon	Phosphate	None.
23200	Florian Dovichi	Rochester	Blackberry Cider	None.
23288	C. R. Keesler	Anderson	Lemon Soda	None.
23289	C. R. Keesler	Anderson	Root Beer	None.
23290	C. R. Keesler	Anderson	Art. Strawberry	None.
23291	John Noonan	Anderson	Lemon Soda	None.
23292	John Noonan	Anderson	Sarsaparilla	None.
23560	Block's	Indianapolis	Grape Juice	None.
23566	E. S. Greene	Lebanon	Imp. Strawberry	None.
23568	E. S. Greene	Lebanon	Artificial Lemon	None.
23569	E. S. Greene	Lebanon	Iron Brew	None.
23570	E. S. Greene	Lebanon	Art. Orange Cider	None.
23571	E. S. Greene	Lebanon	Gay Ola	None.
23866	Geo. Drury	Crawfordsville	Sweet Cider	None.
23868	Geo. Drury	Crawfordsville	Orange Soda	None.
23903	Guy Pickering	Darlington	Blood Orange Soda	None.
23904	Guy Pickering	Darlington	Strawberry Soda	None.
24151	Sent in from	Greensburg	Coco-Cola	None.

BEVERAGES—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Kind of Sample.	Remarks.
21410	Crown Cider Co., St. Louis	Beech Grove	Cherry Cider	Benzoate and saccharin present; artificial color.
22023		Vincennes	Cider	Benzoic acid and saccharin present.
22059	Nettie Krouse	Elkhart	Cider	Odor of coal oil.
23202	O. A. Vandergrift	Rochester	Concord Grape	Artificial color and flavor.
23535		Indianapolis	Soda	Sample dirty.
23567	E. S. Greene	Lebanon	Concord Grape	Not properly labeled.

CANDY.

Of the 19 samples of candy examined, but 2 were illegal. These samples were coated, with shellac. Several of the samples examined were sent in by persons who suspected the presence of poisons. In no case was any injurious or deleterious ingredient present.

So far as the laboratory can determine the cheap candies are as wholesome as the higher priced goods. The materials from which they are made are cheaper, the labor cost is lower and the profit is smaller on the low grade goods, but the candy hunger of children may be satisfied quite as safely with the ten-cent article as with the fancy box or beribboned product of the high-class confectioner.

CANDY—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Polarization.		Starch, Glucose, Terra Alba, Gypsum, Paraffine, Shellac, Saccharin.	Remarks.
		Direct.	Invert.		
21799	W. H. Kirkman, Pendleton........	+82.0	—29.7	None........	Pure cane sugar candy.
21808	S. H. Knox, Evansville............	+111.0	+10.1	None........	Chocolate candy.
21809	S. H. Knox, Evansville............	+127.0	+95.0	Starch present.	Caramel candy.
21810	S. H. Knox, Evansville............	+113.0	+11.0	None........	Entirely soluble.
21811	Independent 5 & 10 Cent Store, Evansville......................	+133.4	+114.4	Starch present.	
21812	Independent 5 & 10 Cent Store, Evansville......................	+99.2	+3.3	None........	
21813	Independent 5 & 10 Cent Store, Evansville......................	+152.0	+127.6	None........	
21814	C. A. Kessler & Co., Evansville....	+117.2	+24.2	None........	Gum drops.
21815	C. A. Kessler & Co., Evansville....	+89.4	+24.4	None........	Iced dates.
22225	Sent in from Elwood...............	....	....	....	No arsenic present.
22301	Sent in from Upland...............	....	....	....	No arsenic present.
22790	Sent in from New Castle..........	....	....	....	No poisons found.
22791	Sent in from Greencastle..........	....	....	....	No poisons indicated by physiological test.
22911	Kresge 10 Cent Store, Indianapolis.	....	....	....	No dirt present.
22951	Sent in from Winchester...........	....	....	....	
23283	Sent in from South Bend..........	....	....	....	No heavy metal in ash, no paraffin, no dirt.
24062	Sent in from Rising Sun...........	....	....	....	No arsenic or other poisons.

CANDY—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Polarization.		Starch, Glucose, Terra Alba, Gypsum, Paraffine, Shellac, Saccharin.	Remarks.
		Direct.	Invert.		
21562	A. Weesner, Converse.............	....	....	....	Varnish coating on sample.
21657	O. P. Winders, Arcadia............	....	....	Coated with shellac.	

CANNED FRUITS.

Of the 27 samples of canned fruit examined 12, or 44.4 per cent., were illegal. In every case the illegal samples were so classed because of the presence of preservatives or artificial color. Five of the samples contained formic acid, a preservative heretofore not sought, and so far as we are advised not used in this country except by one firm, the Crown Cordial and Extract Company.

Five samples of soda fountain goods were preserved with benzoate of soda. Aside from these samples we have found no evidence of the use of preservatives in canned or crushed fruits commonly served at the soda fountain.

CANNED FRUITS—LEGAL.

Laboratory No.	Manufacturer or Dealer.	Kind of Fruit.	Preservative.	Remarks.
21674	E. S. Gantes, Center Point	Apples		Fruit sound.
22130	Sent in from Indianapolis	Peaches	None	No gelatin.
22418	A. Keifer Drug Co., Indianapolis	Crushed Peach	None	
22824	Sent from Indianapolis	Strawberries	None	
23071	C. E. Reese, Peru	Raspberries	None	
23295	John D. Koplos, Anderson	Strawberries	None	
23296	John D. Koplos, Anderson	Cherries	None	
23297	John D. Koplos, Anderson	Pineapple	None	
23298	Geo. Chofers, Anderson	Pineapple	None	
23299	Geo. Chofers, Anderson	Cherries	None	
23300	Geo. Chofers, Anderson	Strawberries	None	
23301	Kleder & Torrane, Anderson	Pineapple	None	
23302	Kleder & Torrane, Anderson	Raspberries	None	
23303	Anderson Drug Co., Anderson	Pineapple	None	
23304	Anderson Drug Co., Anderson	Cherries	None	

CANNED FRUITS—ILLEGAL.

Laboratory No.	Manufacturer or Dealer.	Kind of Fruit.	Preservative.	Remarks.
22283	W. A. Walker & Co., Indianapolis	Strawberries	Formic acid	Preservative present.
22284	W. A. Walker & Co., Indianapolis	Peaches	Formic acid	
22704	W. A. Walker & Co., Indianapolis	Pineapple	Formic acid	
22705	W. A. Walker & Co., Indianapolis	Strawberries	Formic acid	
22706	W. A. Walker & Co., Indianapolis	Morello Cherries	Formic acid	
23072	C. E. Reese, Peru	Strawberries	Benzoate	
23073	C. E. Reese, Peru	Pineapple	Benzoate	
23074	Sanitary Milk Co., Peru	Strawberries	Benzoate	
23075	Sanitary Milk Co., Peru	Minced Cherries	Benzoate	
23076	Sanitary Milk Co., Peru	Pineapple	Benzoate	
23198	Florian Dovichi, Rochester	Strawberries	None	Artificially colored.
23199	Florian Dovichi, Rochester	Pineapple	None	Artificially colored.

CANNED VEGETABLES.

All of the 34 samples of canned vegetables analyzed were legal. A number of samples were improperly processed, but in other respects they complied with the Pure Food Law.

CANNED VEGETABLES—LEGAL.

Laboratory No.	Article.	Where Collected.	Result of Analysis.
18249	Corn	Wabash	Can well processed; legal.
20796	Corn	Indianapolis	No saccharin, no scorching; legal.
21192	Peas	Logansport	No benzoate; legal.
21291	Pork and Beans	Brazil	Moulds present in sauce.
21346	Tomatoes	Brownsburg	Legal.
21347	Tomatoes	Brownsburg	Legal.
21348	Tomatoes	Jamestown	Legal.
21349	Tomatoes	Jamestown	Legal.
21417	Tomatoes	Elwood	Sample overcooked.
21489	Tomatoes	Brazil	No moulds present.
21490	Tomatoes	Columbus	One field in 150 contained mould filament.
21494	Tomatoes	Hope	No moulds in liquor in 150 fields.
21498	Pork and Beans	Greenwood	No moulds present; no yeasts.
21501	Pork and Beans	Greenwood	No moulds in tomato sauce; very few yeasts.
21518	Pork and Beans	Greenwood	Some yeasts present; moulds present.
21526	Corn	Frankfort	Processed too long and not properly cooled; ends of can show scorching.
21527	Corn	Frankfort	Processed too long and not properly cooled; ends of can show scorching.
21528	Corn	Frankfort	Processed too long and not properly cooled; ends of can show scorching.
21671	Tomatoes	Centerpoint	Legal; good color; meat whole.
22095	Tomatoes	Plainville	No mould; legal.
22281	Beans	Greenwood	Beans were badly decomposed.
22477	Canned Beets	Gary	Did not show spoilage.
22680	Beans	Indianapolis	Moulds at surface of dark beans. Center free from moulds.
22681	Beans	Indianapolis	Beans incubated for seven days do not show mould growth.
22682	Beans	Indianapolis	After seven days incubation do not show mould growth.
22683	Beans	Indianapolis	Do not show mould growth.
22684	Beans	Indianapolis	Do not show mould growth.
22685	Beans	Indianapolis	Do not show mould growth.
22944	Beans	Indianapolis	Liquor free from mould; few bacteria; many mould spores present.
23137	Beans	Largange	Legal.
23285	Corn	Delphi	No benzoate; no saccharin; no salicylic acid.
23286	Peas	Delphi	No benzoate; no saccharin; no copper; no salicylic acid.
23287	Peas	Delphi	No benzoate; no saccharin; no copper.
24177	Tomatoes	Indianapolis	After six days can showed small amount of gas.

CATSUP.

Of the 40 samples of catsup examined 30 were legal and 10, or 25 per cent., illegal. Eight of the 10 illegal samples were so classed because of the presence of benzoate of soda. These samples were old goods packed before the canners recognized the folly of adding preservatives to goods which may readily be preserved by sterilization only. Two samples of catsups were classed as illegal because of the presence of decomposed, organic material.

The legal catsups were so classed because the mould counts were sufficiently low to indicate the use of proper raw materials and satisfactory methods of sterilization.

CATSUP—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. Benzoate.	Per Cent. Moulds.	Remarks.
21153	Beitman Wolf & Co., Wabash	....	7.8	
21156	Beitman Wolf & Co., Wabash	....	9.4	
21196	Chas. Elmfire Grocery Co., Logansport	....	25.3	
21351	Columbus Canning Co	....	9.8	
21355	Louden Packing Co., Terre Haute	....	7.2	
21359	Dyer Packing Co., Vincennes	....	9.6	
21360	Dyer Packing Co., Vincennes	....	19.6	
21392	Snider Preserve Co., Marion	....	12.3	
21418	Sent in from Indianapolis	....	....	
21472	Mullen-Blackledge-Nellis, Brazil	....	1.0	
21473	Mullen-Blackledge-Nellis, Brazil	....	10.7	
21477	Mullen-Blackledge-Nellis, Brazil	....	13.3	
21478	Mullen-Blackledge-Nellis, Brazil	....	....	
21682	Sent in from Indianapolis	....	7.05	No saccharin or salicylic acid.
21665	P. J. Murphy, Brazil	....	7.9	
21921	Cruikshank Bros., Pittsburg, Pa	....	6.86	Spirals do not indicate decomposed material.
21922	Sent in from Indianapolis	....	7.14	
22044	Sent in from Elwood	....	16.6	
22223	Sent in from Indianapolis	....	17.2	Spirals do not show sheath.
22666	Sent in from Indianapolis	....	14.0	Tissue in good condition.
22667	Sent in from Indianapolis	....	12.9	Tissue in good condition. Spirals show sheath.
22668	Sent in from Indianapolis	....	17.6	Spirals show sheath; tissue in good condition.
22669	Sent in from Indianapolis	....	10.4	Spirals show sheath; tissue in good condition.
22670	Sent in from Indianapolis	....	14.7	Tissue in good condition.
22671	Sent in from Indianapolis	....	10.3	Tissue in good condition.
22672	Sent in from Indianapolis	....	10.0	Tissue in good condition.
22673	Sent in from Indianapolis	....	13.7	Tissue in good condition.
22674	Sent in from Indianapolis	....	9.8	Tissue in good condition.
23146	Sent in from Greenwood	....	9.5	Very few yeasts present.
23517	John D. Koplos, Anderson	....	11.0	Tissue in good condition.

CATSUP—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. Benzoate.	Per Cent. Moulds.	Remarks.
21189	F. Hall, Logansport	.215	2.0	Benzoate of soda present.
21361	Dyer Canning Co., Vincennes	....	33.0	Too high in mould count.
21474	Mullen-Blackledge-Nellis, Brazil	.080	2.2	Benzoate of soda present.
21476	Mullen-Blackledge-Nellis, Brazil	.091	12.0	Benzoate of soda present.
21479	Mullen-Blackledge-Nellis, Brazil	.111	....	Benzoate of soda present.
21480	Mullen-Blackledge-Nellis, Brazil	.117	....	Benzoate of soda present.
22164	Sent in from Indianapolis	....	Very few.	Much tissue; in broken down condition. Spirals do not show sheath.
22435	Spencer, Hogan Co., Marion	.103	17	Benzoate of soda present.
22436	Swayzec Market, Marion	.132	23	Benzoate of soda present.
22437	Swayzee Market, Marion	.126	15	Benzoate of soda present.

COFFEE.

All of the 11 samples of coffee analyzed were pure. Included in the list, however, are several coffee compounds and substitutes, all of which were properly labeled. One sample analyzed was sent in to be examined for the presence of arsenic.

COFFEE—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Blend.	Remarks.
19736	F. P. Broadway & Son, Warsaw	Hy-Lo Blend	
19792	L. W. Davidson, Rochester	C. C. & B. P. Co	
19885	J. S. Pingler, Terre Haute	Coffee Compound	
20606	Jim & George Co., Indianapolis	Chickory	
21740	J. S. Pingler, Terre Haute	Coffee Compound	Combination of cereal coffee; chickory.
21741	L. W. Davidson, Rochester	C. C. & B. P. Co	No statement as to kind of coffee.
21742		Chickory	
21743		Coffee Substitute	Label is legal.
22725	Sent in from Indianapolis		No chickory by microscope; no chickory by water test.
22986	Sent in from Indianapolis		No chickory indicated.
23587	Sent in from Columbus		No arsenic present.

CREAM OF TARTAR.

But two samples of cream of tartar were examined during the year, and both were classed as legal.

CREAM OF TARTAR.

Laboratory No.	Manufacturer or Retailer.	Remarks.
22286	Sent in from Ft. Wayne	No alum; no phosphate; no starch.
23140	Sent in from Lagrange	No alum; is 99.5 per cent. pure.

FLAVORING EXTRACTS.

LEMON.

Of the 21 samples of lemon extract examined, 14 were legal and 7, or 33.3 per cent., were illegal. Five of the illegal extracts were terpeneless. In every case the citral content was slightly below the required amount. The two other illegal lemon extracts did not contain the 5 per cent. of lemon oil required by law.

LEMON EXTRACT—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. G. at 20° C.	Polarization 200 mm. Tube	Per Cent. Lemon Oil.	Per Cent. Alcohol.	Remarks.
21426	Wm. Coblents, Peru	.8435	+16.0	5.0	76.19	
21456	J. E. Smithimer, Shipshewana	.8376	+16.6	5.18	78.51	
21653	R. F. Dyer, Lapel	.8298	16.8	5.25	81.48	
21662	Carey & Dick, Cicero	.8439	+17.2	5.37	75.79	
21670	Martha J. Watt, Centerpoint	.8329	+30.0	9.37	78.03	
21795	McCaffrey & Co., Kokomo	.8243	+20.5	6.4	82.74	
23026	Jacob Singer, Lafayette	.8186	23.0	7.2	91.2	
23819	N. B. McCollough, Franklin			6.1	88.26	

LEMON EXTRACT—ILLEGAL

Laboratory No.	Manufacturer or Retailer.	Sp. G. at 20° C.	Polarisation 200 mm. Tube.	Per Cent. Lemon Oil.	Per Cent. Alcohol.	Remarks
22101	A. C. Gillies, Elwood	.8238	9.6	3	89.7	Low in oil of lemon.
22422	Evans & Evans, Marion	.8558	12.6	3.93	80.09	Low in oil of lemon.

TERPENELESS EXTRACT OF LEMON—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. G. at 20° C.	Polarisation 200 mm. Tube.	Citral.	Remarks.
18129	J. H. Hoff, North Judson	.9438	+0.6	.21	
19400	Benj. Crothers, Marco	.9630	+0.0	.20	
20378	Henry Haas, Riley	.9425	+0.1	.20	
21668	Taggart & Hoffman, Lawrenceburg	.9410	+0.1	.25	
21676	Julian Ury, Centerpoint	.9435	+0.1	.24	
22904	Sent in from Crawfordsville	....	....	.208	

TERPENELESS EXTRACT OF LEMON—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. G. at 20° C.	Polarisation 200 mm. Tube.	Citral.	Remarks.
20599	W. L. Brown, Indianapolis	.9459	+0.5	.19	Slightly below standard.
20699	W. W. Davis, Winchester	.9455	+4.1	.19	Slightly below standard.
21222	J. W. Moore & Son, Indianapolis	.9203	+1.2	.19	Slightly below standard.
21306	W. A. Trent, Worthington	.9389	+0.2	.19	Slightly below standard.
21308	Bob Shelburn, Worthington	.9568	+0.0	.19	Slightly below standard.

VANILLA EXTRACT.

Of the 24 samples of vanilla extract examined 18 were pure and 6, or 25 per cent., illegal. The illegal samples were so classed because of the presence of vanillin or coumarin. Several of the extracts classed as legal contained added vanillin and coumarin, but were properly labeled and therefore satisfactory.

VANILLA EXTRACT—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Vanillin.	Normal Lead Number.	Coumarin.	Sugar.	Solids not Sugar.
22988	A. F. Schmidt, Lawrenceburg					1.685
21304	W. A. Trent, Worthington	.3480	.1065		1.12	.124*
21307	Bob Shelburn, Worthington	.25	.4288		2.00	2.450*
21470	John V. Kellar, Worthington		.4951		19.19	
21471	John V. Kellar, Worthington		.4752		12.31	2.386
21565	A. Weesner, Converse	.0724	.1693		12.07	6.336*
21654	R. F. Dyer, Lapel		.5053		18.52	2.908
21661	Carey & Dick, Cicero		.6556		17.32	5.057
21675	J. Ury, Centerpoint		.0710		16.27	.326*
21677	Julian Ury, Centerpoint		.0710		13.6	.711*
21678	Julian Ury, Centerpoint		.1994		26.0	3.910*
21794	McCaffrey & Co., Kokomo		.7648		8.72	9.257
22100	A. C. Gillies, Elwood		.7703		6.2	7.97
22421	Evans & Evans, Marion		.0546	Present.	2.9	7.438*
23025	Jacob Singer, Lafayette		.7673		4.9	4.1
23070	Sent in from Muncie	.4400				
23196	Sent in from Muncie		.4944		10.3	3.36
24182	Sent in from Indianapolis	.1328				

*Properly labeled.

VANILLA EXTRACT—ILLEGAL

Laboratory No.	Manufacturer or Retailer.	Vanillin.	Normal Lead Number.	Coumarin.	Sugar.	Solids not Sugar.
21305	W. A. Trent, Worthington	.4252	.3633			14.562
21427	Wm. Coblentz, Peru	.1940	.0218	.2096	5.32	11.113
21656	J. E. Scott, Atlanta	.0288	.3660		1.31	2.913
23112	Frueh & Thomas, Mishawaka		.2976		3.6	20.499
24042	Sent in from Crawfordsville	.0464	.275	.0191		
24060	Sent in from Terre Haute	.0788		.0132		

FLOUR.

Of the 21 samples of flour examined during the year 18 were pure, and 3, or 14.3 per cent., were illegal. Two of the 3 illegal samples were heavily bleached. A third sample was a buckwheat flour which contained wheat flour. One sample of flour was examined for arsenic, which, however, did not prove to be present.

FLOUR—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Remarks.
21161	T. V. Mills	Decatur	No nitrites.
21162	T. V. Mills	Decatur	No nitrites.
21163	T. V. Mills	Decatur	No nitrites.
21444			No nitrites.
*21782	Sent in from	Wabash	No foreign starch.
*21838	Sent in from	Ft. Wayne	Is pure buckwheat.
*22021	Sent in from	Marion	Pure buckwheat.
*22162	Sent in from	Pleasant Lake	No foreign starch present.
23147	Sent in from	Covington	No arsenic or other poisons.

FLOUR—LEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Remarks.
22643	Sent in from	Lowell	No nitrites.
*22862	Sent in from	New Haven	No foreign starch.
*22863	Sent in from	Dayton	No foreign starch.
*22891	Sent in from	Warsaw	Legal.
23561	Sent in from	Walkerton	No corn starch.
23175	F. M. Lauman	Attica	Legal.
23176	F. M. Lauman	Attica	Legal.
23177	F. M. Lauman	Attica	Legal.
23178	F. M. Lauman	Attica	Legal.

*Buckwheat flours.

FLOUR—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Remarks.
*22022	Sent in from	Marion	Contains wheat flour.
22163	Sent in from	Valparaiso	Sample is heavily bleached.
23204	Sent in from	Grandview	Nitrites present. Sample is bleached.

*Buckwheat flours.

FRUIT BUTTERS.

Of the 7 samples examined 3 were legal and 4, or 57.1 per cent., adulterated. The adulterated samples were so classed because of the presence of benzoate of soda.

FRUIT BUTTERS.

Laboratory No.	Classification.	Manufacturer.	Benzoate of Soda Per Cent.	Remarks.
16844	Apple butter	J. C. Schnull, Peru		Legal.
17940	Apple butter	Williams Bros., Detroit Mich	.067	Adulterated with benzoate of soda.
17950	Apple butter	Williams Bros., Detroit, Mich.	.205	Adulterated with benzoate of soda.
20708	Apple butter	Louisville Preserve Co	.128	Benzoate of soda present.
21127	Peach butter compound	Bessire Company		Legal.
21425	Apple butter	Louisville Preserving Co.		Legal.
21937	Imitation apple butter	H. S. Richardson & Co.	.037	Adulterated with benzoate of soda.

GELATIN.

All of the 8 samples of gelatin examined were legal, showing neither colon bacilli nor the presence of added color or bleach.

GELATIN—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Remarks.
21197	August Snider, Logansport	Artificially colored and properly labeled.
21198	August Snider, Logansport	Artificially colored and properly labeled.
21199	August Snider, Logansport	Artificially colored and properly labeled.
21200	August Snider, Logansport	Artificially colored and properly labeled.
21230	Wysong Candy Co., Indianapolis	No colon bacilli present.
21233	J. Darmody, Indianapolis	No colon bacilli present.
21238	Dilling Candy Co., Edinburg	No colon bacilli present.
21240	National Candy Co., Indianapolis	No colon bacilli present.

HONEY.

But 6 samples of honey were examined during the year, and in each case the sample was pure. Five of the samples were sent in by persons who suspected the presence of sugars other than those stored by the bee.

HONEY—LEGAL

Laboratory No.	Name and Address of Retailer.	Polarization.		Sucrose.	Invert Sugar.	Total Per Cent. Ash.	Remarks.
		Direct.	Invert.				
21263	Home Preserving Co., Indianapolis	—18.0	—21.56	2.70	68.9	.010	Legal.
22239	Sent in from Terre Haute	—14.8	—22.22	4.46	76.1	.058	
22701	Sent in from Valparaiso	—13.0	—15.40		40.2	.214	
22702	Sent in from Elkhart	—11.0	—18.26		40.6	.096	
22703	Sent in from Gary	—20.2	—18.40		41.8	.256	
23972	Sent in from Indianapolis	—21.0	—21.33				Honey.

HORSERADISH.

HORSERADISH—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Foreign Starch.	Foreign Tissue.
21873	O. E. Baldwin, Muncie	None	None.
21967	Rinne Grocery, Indianapolis	None	None.
23515	C. H. Wulff, Valparaiso	None	None.
23516	O. F. Hoover, Plymouth	None	None.

LARD.

Of the 22 samples of lard examined, 17 were pure and 5, or 22.7 per cent., adulterated. The adulterated samples in each instance were so classed because of the presence of beef fat.

LARD—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Butyro Reading at 40° C.	Remarks.
21781	Sent in from Greencastle	49.8	No beef fat or cottonseed oil.
21868	J. A. Eaton, Wanatah	50.9	No beef fat.
22123	Sent in from Anderson	50.0	No beef fat.
22563	Shick Bros., Elkhart	50.0	No beef fat or cottonseed oil.
22566	J. Bauscher, Elkhart	48.5	No beef fat or cottonseed oil.
22569	W. S. Chudaniel, Elkhart	49.5	No beef fat or cottonseed oil.
22589	C. H. Wulff, Valparaiso	51.2	No beef fat or cottonseed oil.
22592	Leetz & Son, Valparaiso	50.0	No beef fat or cottonseed oil.
22598	E. E. Shedd, Valparaiso	49.8	No beef fat or cottonseed oil.
22784	Sent in from Salem	50.2	No beef fat or cottonseed oil.
22831	Geo. Godwin, Washington	50.0	No beef fat or cottonseed oil.
22837	C. G. Stumppf, Washington	50.0	No beef fat or cottonseed oil.
23027	Jacob Singer, Lafayette	50.2	No beef fat or cottonseed oil.
23251	Sent in from Bainbridge	47.0	No beef fat or cottonseed oil.
23752	Sent in from Bainbridge	51.0	No beef fat.
23753	Sent in from Bainbridge	51.0	No beef fat.
23958	Sent in from Elkhart	49.5	No beef fat.

LARD—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Butyro Reading at 40° C.	Remarks.
21393	Sent in from South Bend	48.6	Beef fat present. Illegal.
21816	J. P. Tarr, Paoli	49.6	Beef fat present.
22124	Sent in from Richmond	51.3	Beef fat present.
22594	J. T. Scott, Valparaiso	49.0	Beef fat present.
23445	Sent in from Madison	49.7	Beef fat present.

MAPLE SYRUP.

Twenty-two samples of maple syrup were examined, of which 21 were legal and 1, or 4.5 per cent., impure. The impure sample was so classed because it did not contain a sufficient sugar content. The day when maple syrups were usually heavily adulterated with sugar syrup is evidently past.

MAPLE SYRUP—LEGAL.

Laboratory No.	Retailer or Manufacturer.	Polarization.		Sucrose.	Total Per Cent. Ash.	Alk. of Ash.		Solids.
		Direct.	Invert.			Soluble.	Insoluble	
22941	Sent in from Waldron	+64.6	—21.01	64.5	.74	.26	.56	68.08
22985	Sent in from Bowling Green	+49.5	—21.78	53.7	.86	.20	.72	67.67
22989	J. P. Tarr, Paoli	+93.9	—21.12	64.1	.62	.22	.40	67.48
22990	B. K. Deremiah, Paoli	+62.7	—20.90	63.6	.59	.16	.48	66.88
22991	B. K. Deremiah, Paoli	+61.6	—20.24	61.7	.79	.38	.56	65.83
22992	Louis Moll, Paoli	+63.6	—20.02	63.0	.89	.30	.72	67.03
22993	Charles Lingle, Paoli	+57.5	—21.34	59.4	.97	.46	.66	68.68
22994	Sent in from Paoli	+59.8	—20.02	60.2	.88	.36	.78	64.48
23019	Sent in from Greenfield	+63.7	—21.78	64.4	.56	.14	.40	58.43
23021	Sent in from Brazil	+47.6	—22.00	53.2	.90	.20	.88	63.79
23041	Sent in from Muncie	+58.2	—24.86	63.5	.67	.20	.60	68.79
23042	Sent in from Indianapolis	+62.0	—24.64	66.3	.69	.32	.64	68.89
23143	Sent in from Edinburg	+62.6	—24.20	66.4	.88	.26	.56	69.14
23184	Sent in from Terre Haute	+68.0	—19.14	66.6	.73	.20	.32	69.02
23185	Sent in from Ligonier	+67.0	—22.00	68.1	.70	.22	.36	68.97
23186	Sent in from Bloomington	+65.6	—22.22	67.2	.60	.34	.40	68.02
23187	Sent in from Richmond	+63.6	—20.12	64.0	.70	.32	.56	65.72
23246	Sent in from Indianapolis	+66.6	—21.80	69.5	.38	.36	.50	....
23306	Sent in from Bedford	+64 8	—22.14	66.5	.65	.42	.60	68.80
23723	Sent in from Richmond	+54.4	—20.90	57.63	.64	.48	.64	70.17
23724	Sent in from Greenfield	+59.6	—21.12	61.78	.50	.20	.12	68.77

MAPLE SYRUP—ILLEGAL.

Laboratory No.	Retailer or Manufacturer.	Polarization.		Sucrose.	Total Per Cent. Ash.	Alk. of Ash.		Solids.
		Direct.	Invert.			Soluble.	Insoluble	
23910	Sent in from Muncie	+53.6	—17.6	55.38	....	.4	.18	57.27

MEATS.

PREPARED MEATS.

Eighty-five samples of prepared meats were examined during the year, of which 72 were pure and 13, or 15.3 per cent., impure.

The illegal samples were so classed because of the presence of sulphites, as was the case with 10 samples of sausage and hamburger steak, or starch, which was an adulterant in two samples of frankfurter sausage.

PREPARED MEATS—LEGAL.

Laboratory No.	Classification.	Manufacturer.	Starch.	Borax.	Sulphites.
21733	Ham	Sent in from Dupont	....	....	
22031	Pork sausage	W. H. Bafford, Bloomington	None	None	None.
22032	Pork sausage	I. I. Walker, Bloomington	None	None	None.
22033	Pork sausage	McCortney-Beckner, Bloomington.	None	None	None.
22034	Hamburger	McCortney-Beckner, Bloomington.	None	None	None.
22295	Hamburger	J. Eckhers, W. Lafayette	None	None	None.

PREPARED MEATS—LEGAL—Continued.

Laboratory No.	Classification.	Manufacturer.	Starch.	Borax.	Sulphites.
22296	Sausage	J. Eckhers, W. Lafayette	None	None	None.
22300	Sausage	John Wenzler, W. Lafayette	None	None	None.
22301	Weinerwurst	John Wenzler, W. Lafayette	None	None	None.
22406	Sausage	Barkley & Co., Decatur	None	None	None.
22408	Sausage	Mutschler & Meyer, Decatur	None	None	None.
22409	Bologna	Mutschler & Meyer, Decatur	Present; properly labeled.		
22410	Sausage	D. Schmitt, Decatur	None	None	None.
22411	Frankfurters	D. Schmitt, Decatur	None	None	None.
22412	Sausage	Baker & Hower, Decatur	None	None	None.
22414	Sausage	S. J. Hine, Decatur	Present; properly labeled.		
22415	Frankfurters	S. J. Hine, Decatur	None	None	None.
22459	Hamburger	F. C. Fleuty, Laporte	None	None	None.
22460	Sausage	F. C. Fleuty, Laporte	None	None	None.
22463	Sausage	Tanke Bros., Laporte	None	None	None.
22464	Hamburger	Tanke Bros., Laporte	None	None	None.
22465	Sausage	F. W. Steigley, Laporte	None	None	None.
22466	Hamburger	F. W. Steigley, Laporte	None	None	None.
22467	Hamburger	Ben Zanolar, Laporte	None	None	None.
22468	Sausage	Ben Zanolar, Laporte	None	None	None.
22469	Sausage	Zahrt Bros., Laporte	None	None	None.
22470	Hamburger	Zahrt Bros., Laporte	None	None	None.
22471	Sausage	C. F. Miller & Son, Laporte	None	None	None.
22472	Sausage	S. Norten, Laporte	None	None	None.
22473	Sausage	F. M. Doerner, Laporte	None	None	None.
22557	Sausage	Buehler Bros., Elkhart	None	None	None.
22558	Hamburger	Buehler Bros., Elkhart	None	None	None.
22559	Sausage	C. F. Moyer, Elkhart	None	None	None.
22561	Sausage	Meyers & Swoke, Elkhart	None	None	None.
22564	Hamburger	G. W. Greiner, Elkhart	None	None	None.
22562	Sausage	Shick Bros., Elkhart	None	None	None.
22565	Hamburger	P. Rittle, Elkhart	None	None	None.
22567	Sausage	Gernberling & Bodge, Elkhart	None	None	None.
22568	Hamburger	E. Rush, Elkhart	None	None	None.
22586	Sausage	Horn Bros., Valparaiso	None	None	None.
22588	Sausage	C. H. Wulff, Valparaiso	None	None	None.
22627	Frankfurters	E. V. Barney, Marion	None	None	None.
22628	Bologna	E. V. Barney, Marion	None	None	None.
22639	Sausage	L. D. Johnson, Marion	None	None	None.
22631	Sausage	Hi Hinkle, Marion	None	None	None.
22640	Bologna	L. D. Johnson, Marion	None	None	None.
22651	Sausage	Pesch Bros., Plymouth	None	None	None.
22653	Sausage	B. E. Carman, Plymouth	None	None	None.
22655	Sausage	Wm. Miller, Michigan City	None	None	None.
22657	Sausage	L. Dingler, Michigan City	None	None	None.
22658	Sausage	H. A. Suehrstedt, Michigan City	None	None	None.
22659	Sausage	H. A. Suehrstedt, Michigan City	None	None	None.
22660	Sausage	Ebert Bros., Michigan City	None	None	None.
22661	Hamburger	Buehler Bros., Michigan City	None	None	None.
22662	Sausage	Buehler Bros., Michigan City	None	None	None.
22663	Sausage	Brinchman & Son, Michigan City	None	None	None.
22741	Sausage	Sent in from Culver	None	None	None.
22770	Headcheese	Sent in from Terre Haute	None	None	None.
22812	Sausage	Sent in from South Bend	None	None	None.
22838	Pork sausage	C. G. Stumppf, Washington	None	None	None.
22841	Sausage	Joseph Tittle, Laporte	None	None	None.
22842	Hamburger	F. W. Steigley, Laporte	None	None	None.
22843	Sausage	F. W. Steigley, Laporte	None	None	None.
23030	Sausage	Kaiser Bros., Lafayette	None	None	None.
23031	Sausage	David Kurtz, Lafayette	None	None	None.
23671	Vienna sausage	A. D. Hinshaw, Winchester	None	None	None.
23672	Deviled meat	A. D. Hinshaw, Winchester	None	None	None.
24082	Hamburger steak	S. W. Snodgrass, Terre Haute	None	None	None.
24085	Sausage	J. L. Warden, Terre Haute	None	None	None.
24086	Hamburger	J. L. Warden, Terre Haute	None	None	None.
24087	Sausage	John Lake, Terre Haute	None	None	None.
24088	Sausage	Chicago Packing Co., Terre Haute.	None	None	None.

PREPARED MEATS—ILLEGAL.

Laboratory No.	Classification.	Manufacturer.	Starch.	Borax.	Sulphites.
23261	Meat	Sent in from Indianapolis	Arsenic and antimony present.		
22407	Hamburger	Barkley & Co., Decatur		None	Present.
22413	Hamburger	Baker & Hower, Decatur		None	Present.
22461	Hamburger	John Piest, Laporte		None	Present.
22462	Sausage	John Piest, Laporte	None	None	Present.
22560	Hamburger	C. F. Moyer, Elkhart		None	Present.
22587	Sausage	J. W. Sieb, Valparaiso		None	Present.
22654	Hamburger	Wm. Miller, Michigan City		None	Present.
22656	Hamburger	L. Dingler, Michigan City		None	Present.
22664	Hamburger	Brinkman & Son, Michigan City		None	Present.
22840	Hamburger	Joseph Tittle, Laporte		None	Present.
24083	Wieners	S. W. Snodgrass, Terre Haute	Present		
24084	Large frankfurters	S. W. Snodgrass, Terre Haute	Present		

MINCEMEAT.

But one of the 4 samples of mincemeat was illegal. This sample contained benzoate of soda.

MINCEMEAT.

Laboratory No.	Manufacturer or Retailer.	Benzoate of Soda.	Salicylic Acid.	Borax.	Remarks.
21188	Bruce, Reed Co., Clymers	None	None	None	Legal.
21797	Earl C. Lee, Pendleton	None	None	None	Legal.
22110	Market House, Indianapolis	None	None	None	Legal.
22638	Swayzee Market, Marion	Present	None	None	Illegal.

MISCELLANEOUS FOOD PRODUCTS.

Thirty-four food products of varying character, either collected by inspectors or sent in by parties wishing to know their composition, were examined during the year. Twenty-eight samples were pure and 6, or 17.6 per cent., were classed as illegal.

A study of the appended table will show the character of the goods and the reason for the rejection.

MISCELLANEOUS FOOD PRODUCTS.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Name of Article.	Remarks.
17853	Joe C. Stegman	Peru	Cola cake	No cocaine present.
21141	McNarney Bros	Wabash	Sugar butter	Legal.
21416	Sent in from	Franklin	Preservative	Legal.
21517	Whites Restaurant	Indianapolis	German fried potatoes	Illegal.
21590	Sent in from	Huntington	Preservative	Legal.
21650	Standard Grocery Co	Indianapolis	Pecans	Legal.
21821	Sent in from	Indianapolis	Peanut butter	Legal.
22111	Market House	Indianapolis	Nuts	Legal.
22120	Sent in from	Indianapolis	Cocoanut	Legal.
22170	Sent in from	Indianapolis	Whip E. Z	Legal.
22230	Sent in from	Indianapolis	Currants	Illegal.
22282	Sent in from	Evansville	Fig	Illegal.
22474	Sent in from	Indianapolis	Sauerkraut	Product appears to be suitable for food.
22556	Sent in from	Petersburg	Toast	Legal.
22597	E. E. Shedd	Valparaiso	Peanut butter	Legal.
22787	Sent in from	Anderson	Egg	Flavor very good.
22788	Sent in from	Anderson	Egg	Flavor very good.
22947	Sent in from	Huntington	Cakes	Legal.
23138	Sent in from	Lagrange	Pumpkin	Rust on can.
23139	Sent in from	Lagrange	Noodles	Wormy.
23339	Sent in from	Oaktown	Hominy hearts	Legal.
23350	Sent in from	Indianapolis	Celery	Legal.
23364	Sent in from	Indianapolis	Onions	Legal.
23669	A. D. Hinshaw	Winchester	Tomato soup	Legal.
23677	E. E. Klefeker & Co	Winchester	Chicken soup	Legal.
23678	E. S. Klefeker	Winchester	Peanut butter	Legal.
23722	Sent in from	Evansville	Bread	Is contaminated with ordinary black mould.
23767	Sent in from	Indianapolis	Tobasco sauce	Legal.
23828	Sent in from	Evansville	Bread	Ordinary black mould present.
23895	McVarney Bros	Wabash	Onion salt	Legal.
24121	Humphries & Son	Portland	Lemon juice	Illegal.
24130	Crook & Wood	Greensburg	Juice of lemon	Illegal.
24131	A. L. Everhart	Greensburg	Pineapple juice	Legal.
24187	Sent in from	Indianapolis	Milk product	Legal.

MUSTARD.

Of the 38 samples of mustard examined 18 were pure and 20, or 52.6 per cent., adulterated. The adulterated samples were so classed because of the fact that the mustard did not meet the standards set out for the product. On page 115 will be found a detailed analysis of the samples and a discussion of the results obtained.

OLEOMARGARINE.

Eleven samples of oleomargarine were examined, and in every instance save one the product was found to be pure. This sample contained 20.73 per cent. of moisture instead of the allowable 16 per cent.

OLEOMARGARINE—LEGAL.

Laboratory No.	Retailer.	Collected.	Butyro at 40° C.	Reichert-Meissl No.	Moisture.	Spoon Test.
22020	M. C. Meyers	Kokomo	48.4	5.253	11.27	No foam.
22231	....	Indianapolis	52.4	1.250	10.80	No foam.
22232	....	Indianapolis	50.3	1.001	9.90	No foam.
22443	....	Indianapolis	52.1	1.080	20.73	
22442	....	Indianapolis	52.1	1.078	8.81	
22441	....	Indianapolis	52.0	1.007	11.41	
22975	Ed. N. Pierce	Jonesboro	50.7	4.710	9.46	No foam.
22976	Ed. N. Pierce	Jonesboro	49.2	2.870	11.67	No foam.
23107	....	Indianapolis	52.0	1.120	....	No foam.
*23206	....	....	....	....	....	
*23205	....	....	....	....	....	

*Analysed for cottonseed oil.

OYSTERS.

Of the 19 samples of oysters analyzed, 7 were legal and 12, or 63.1 per cent., illegal. The illegal samples were so classed because of the high water content.

On page 125 will be found a discussion of a very complete series of analyses of oysters and oyster liquor.

OYSTERS—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Liquor.	Remarks.
21636	Market stand, Indianapolis	7.8	
21637	Market stand, Indianapolis	10.6	
21638	G. A. Nicholson, Indianapolis	8.7	
21639	Market stand, Indianapolis	7.8	
22028	Sent in from Indianapolis	8.3	
22104	Joseph Lewton, Elwood	7.3	
22167	Columbia Grocery Co., Indianapolis	5.7	

OYSTERS—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Liquor.	Remarks.
21635	James Peden, Indianapolis	16.4	Added water.
21735	Geo. A. Nicholson, Indianapolis	18.1	Added water.
21805	M. C. Shea, Indianapolis	21.4	Added water.
21806	Paul Dursewicz, Indianapolis	24.0	Watered.
22017	Humpfer Bros., Hammond	22.9	Free liquor very high, solids rather low in meats.
22025	City Market, Indianapolis	15.1	Solids very low.
22026	Wm. Grund, Indianapolis	16.8	Free liquor high.
22027	City Market, Indianapolis	28.9	Free liquor very high.
22102	Albert Downhon, Elwood	23.1	Free liquor too high, immersion too low, solids low in liquor, Cl. low.
22103	J. A. McNutt, Elwood	25.3	Free liquor high, immersion low, Cl. and Ca. low in liquor and meats.
22168	Frank G. Kamp, Indianapolis	23.3	High in liquor.
22738	Sent in from Tell City	27.0	Sample watered.

OYSTER LIQUOR.

Laboratory No.	Manufacturer or Retailer.	Remarks.
22029	Sent in from Indianapolis................	All factors high, except immersion.
22030	Sent in from Indianapolis................	Fairly good.
22578	....	Fair.
22579	....	Ca., Cl. and immersion low.
22580	....	Very poor on nearly all counts.
22581	....	Solids, immersion and Ca. low
22582	....	Cl., Ca., immersion, solids low.

PRESERVES, JELLIES AND JAMS.

Of the 11 samples examined, 6 were legal and 5, or 45.4 per cent., were illegal. In every instance the samples classed as illegal contained benzoate of soda. In other respects the samples were satisfactory.

PRESERVES, JAMS AND JELLIES—LEGAL.

Laboratory No.	Classification.	Manufacturer.	Polarization.		Sucrose.	Glucose.	Benzoate of Soda.
			Direct.	Invert.			
20799	Raspberry jelly........	Goodwin Preserve Co....	+ 17.6	— 19.6	28.5	....	None.
20800	Blackberry jelly........	Goodwin Preserve Co....	+ 9.0	— 19.4	21.9	....	....
20801	Grape jelly............	Goodwin Preserve Co....	+ 3.2	— 19.8	16.7	....	None.
20802	Apple jelly............	Goodwin Preserve Co....	+ 25.6	— 21.4	36.0	....	None.
21107	Imported fruit jelly....	Pearlman & Co.........	+116.0	—111.1	....	....	None.
21190	Strawberry preserves....	Williams Bros...........	— 1.0	— 16.1	....	....	None.

PRESERVES, JAMS AND JELLIES—ILLEGAL.

Laboratory No.	Classification.	Manufacturer.	Polarization.		Sucrose.	Glucose.	Benzoate of Soda.
			Direct.	Invert.			
20707	Fruit jam.............	E. Brooklyn Preserve Works..............	+127.0	+125.0	....	....	.114
21158	Com. preserves.........	Wm. Edwards..........	+108.0	+105.6	....	....	.080
21281	Imported raspberry jam.	Knox Pickle and Preserve Co.................	+146.8	+142.6	....	....	.056
21282	Imported strawberry jam	Knox Pickle and Preserve Co.................	+136.0	+133.8	....	....	.060
21734	Strawberry jam........	Dodson & Braun........	+ 61.6	+ 59.4	....	35%	.054

RICE.

Eleven samples of rice were analyzed, and of this number 6 were found to be legal, and 5, or 45.5 per cent., illegal. The illegal samples were so classed because of the use of talc as a polish when its presence was not declared on the label of the package, as required by law.

RICE—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Remarks.
21605	Brought in by agent	No coating.
21606	Brought in by agent	Coated with talcum and glucose, but properly labeled.
21642	New York Store, Indianapolis	Polished; properly labeled.
21643	Columbia Grocery Co., Indianapolis	Polished; properly labeled.
22677	Sent in from Portland	
24128	Platt & Son, Union City	Sample not coated.

RICE—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Remarks.
21328	State House Grocery, Indianapolis	Polish not stated on label.
21329	State House Grocery, Indianapolis	Polish not stated on label.
21330	State House Grocery, Indianapolis	Polish not stated on label.
22056	Claude H. Shettel, Middlebury	Polish not stated on label.
22894	Sent from Rossville	Polished and coated without proper label.

SUGAR.

Eight samples of sugar were analyzed during the year, and each sample was found to be pure.

SUGAR.

Laboratory No.	Manufacturer or Retailer.	Polarization.		Remarks.
		Direct.	Invert.	
20741	McCaffrey Co., Peru	+68.8	—23.7	Legal.
20742	McCaffrey Co., Peru	+44.6	—24.0	Legal.
22128	Sent in from Michigan City	+99.6		No color when dissolved in water.
22129	Sent in from Muncie	+99.7		No color when dissolved in water.
22287	Sent in from Ft. Wayne			Legal.
22724	Sent in from Logansport	+99.5		Sample is yellow; has not been bleached.
22945	Sent in from Indianapolis			No sodium chloride present.
23335	Sent in from Vera Cruz	+99.9		No ash.

SYRUPS.

Included in the list of syrups are a great variety of sugar products, glucose, molasses, sorghum, pineapple and maple. Of the 34 samples analyzed, 24 were legal and 10, or 29.4 per cent., illegal. Two samples were classed as illegal because they did not contain the required amount of sugar. Three other samples were labeled incorrectly.

SYRUPS.

Laboratory No.	Where Collected.	Kind of Syrup.	Remarks.
21181	Deer Creek	Sugar syrup	Legal.
21231	Indianapolis	Glucose	Legal.
21232	Indianapolis	Glucose	Legal.
21234	Indianapolis	Glucose	Legal.
21235	Indianapolis	Schnull's syrup	Legal.
21236	Indianapolis	Pure New Orleans	Legal.
21237	Edinburg	Glucose	Legal.
21239	Indianapolis	Glucose	Legal.
21260	Indianapolis	Sorghum	Illegal; not a sorghum.
21261	Indianapolis	Sorghum	Illegal; high in ash.
21409	Osgood	Sorghum	Illegal; high in ash.
21510	South Bend	Sugar cane molasses	Illegal; high in ash.
21610	Indianapolis	Table syrup	Illegal; is a glucose syrup.
22024	Indianapolis	Syrup	Not correctly labeled.
22434	Marion	Mapleine	Illegal; too light in weight.
22712	Atlanta	Cane and maple syrup	Illegal; too light in weight.
22717	Hobbs	Table syrup	Incorrectly labeled.
23562	Indianapolis	Soda syrup	Illegal; coal tar present.
21262	Indianapolis	Glucose	Legal.
21264	Indianapolis	Glucose	Legal.
21424	Tipton	Syrup	Legal.
21608	Indianapolis	Corn syrup and New Orleans molasses	Legal.
21658	Arcadia	Sorghum	Legal.
21609	Indianapolis	Corn syrup and sorghum	Legal.
21729	Greenfield	Sorghum	Legal.
22035	Bloomington	Sorghum molasses	Legal.
22040	Bloomington	Black Jack molasses	Legal.
22114	Sheridan	Sorghum	Legal.
22115	Sheridan	Orleans molasses	Legal.
22207	Lawrenceburg	Sugar house molasses	Legal.
22723	Carmel	Sorghum and glucose	Legal.
22740	Tell City	Pineapple syrup	Legal.
22797	Indianapolis	Syrup	Legal.
23043	Kendallville	Syrup	Legal.

SPICES.

But 9 samples of spice were examined during the year, and of this number 7 were legal and 2, or 22.2 per cent., illegal. The illegal samples were so classed because of the presence of crude fiber in excess of the usual amount.

SPICES.

Laboratory No.	Name and Address of Dealer.	Classification.	Remarks.
21159	S. E. Hite, Decatur	Pepper	Legal.
21207	Aug. Snider, Logansport.	Pepper	Legal.
21644	John Hook, Indianapolis.	Black pepper	Legal.
21646	Dannmeyer Bros., Indianapolis	Ground black pepper	Illegal; slightly below standard in crude fiber and ether extract.
21647	Harry Zimmer, Indianapolis	Ground black pepper	Illegal; very high in crude fiber.
21648	Standard Grocery Co., Indianapolis	Powdered cinnamon	Legal.
21649	Standard Grocery Co., Indianapolis	Ground white pepper	Legal.
23141	Sent in from Lagrange	Cloves	No foreign material.
23142	Sent in from Lagrange	Ginger	No foreign starch.

TOMATO PULP.

Of the 44 samples of tomato pulp analyzed, 36 were pure and 8, or 18.1 per cent., impure. The illegal samples were so classed because of the presence of so large a number of moulds and yeast that the use of decomposed and putrid tomatoes was indicated. The manufacture of tomato pulp is now a well-organized industry. Attempts have been made to standardize the product, but an examination of the tables will show a specific gravity content varying from 1.009 to 1.046. It is quite possible to make a tomato pulp from sound fruit that will show practically no evidence of moulds and yeasts when examined under the microscope. When unfit raw material is used, the moulds and yeast counts are increased. The quality of the goods can be determined with considerable degree of accuracy by observing the total and volatile acids.

Four samples of tomato puree were examined and in every case the results, both chemical and microscopical, were satisfactory.

TOMATO PULP—LEGAL.

Laboratory No.	Manufacturer or Dealer.	Sp. G.	Acidity cc. n/10 per 100	Immersion Reading at 20° C.	Microscopical Examination, Per Cent. of Moulds.
21325	Tuhey Can Co., Muncie	1.0180	*59.0	*31.8	16.0
21342	Ladoga Canning Co	1.0201	57.0	34.3	2.2
21343	Ladoga Canning Co	1.0191	54.0	32.8	4.0
21344	Ladoga Canning Co	1.0201	56.5	33.0	6.0
21345	Ladoga Canning Co	1.0195	54.0	32.5	2.0
21362	Dyer Canning Co., Vincennes	1.1001	76.0	....	6.6
21365	Hoagland Bros., Underwood	1.0171	64.0	31.1	4.0
21367	Austin Canning Co., Leota	1.0211	126.0	32.0	None.
21368	Star Canning Co., Austin	1.0137	237.0	30.3	None.
21370	Ladoga Canning Co	1.0221	67.0	34.9	12.2
21371	Ladoga Canning Co	1.0221	65.0	35.0	9.6
21380	Sent in from Knightstown	1.0140	64.0	29.6	No microscopical examination.
21381	Sent in from Lewisville	1.0114	87.0	27.4	No microscopical examination.
21382	Sent in from Kokomo	1.0211	103.0	33.5	No microscopical examination.
21384	Sent in from Austin	1.0141	45.5	28.7	4.7
21385	Sent in from Austin	1.0147	47.5	29.0	2.4
21386	Sent in from Austin	1.0141	45.0	28.9	2.4
21387	Sent in from Tipton	1.0164	51.0	30.7	4.4
21388	Sent in from Kokomo	1.0144	96.0	28.8	4.0
21389	Sent in from Wabash	1.0295	69.0	41.5	2.0
21390	Sent in from Peru	1.0090	147.0	25.0	None made.
21391	Sent in from Wabash	1.0365	96.0	48.7	2.2
21419	Sent in from Sharpsville	1.0145	47.0	29.7	13.0
21420	Sent in from Bunker Hill	1.0150	44.0	28.4	14.4
21421	....	1.0117	117.0	26.4	18.9
21449	P. F. Smith, Lexington	1.0247	37.2	37.2	13.0
21450	Hersch Bros., Corydon	1.0300	84.0	44.0	3.4
21484	Mullen-Blackledge-Nellis	1.0161	42.5	30.0	10.5
21482	Mullen-Blackledge-Nellis	1.0161	42.0	30.0	7.0
21491	Columbus Canning Co	1.0109	193.0	26.2	13.3
21494	Hope Canning Co., Hope	1.0124	229.0	27.2	13.4
21497	J. T. Polk Co., Greenwood	1.0360	92.0	46.5	.5
21502	J. T. Polk Co., Greenwood	1.0171	48.0	30.9	6.0
21522	Van Camp, Martinsville	1.0205	80.0	33.5	11.5
22224	Sent in from Jeffersonville	....	....	....	11.6
22943	Sent in from Indianapolis	1.0461	....	....	5.4

*Determination made on liquor.

TOMATO PULP—ILLEGAL.

Laboratory No.	Manufacturer or Dealer.	Sp. G.	Acidity cc. $n/_{10}$ per 100.	Immersion Reading at 20° C.	Microscopical Examination, Per Cent. of Moulds.
21363	Ladoga Canning Co., Clay City	1.009	*121.0	*25.8	Moulds and yeasts very much increased; sample fermented.
21364	Ladoga Canning Co., Clay City	1.009	116.0	25.9	Sample fermented; moulds and yeasts very much increased.
21379	Sent in from Elwood	1.020	78.0	34.6	Many yeast cells.
22726	Sent in from Indianapolis				Many bacteria, tissue broken down.
22727	Sent in from Indianapolis				Many bacteria, tissue broken down.
22860	Ladoga Canning Co	1.027			Moulds present; bacteria plentiful; spirals lack sheath.
22861	Ladoga Canning Co	1.028			Moulds present; bacteria plentiful.
24058	Ladoga Canning Co				Most of bacteria alive.

*Determination made on liquor.

TOMATO PUREE.

Laboratory No.	Manufacturer or Dealer.	Sp. G.	Acidity cc. $n/_{10}$ per 100.	Immersion Reading at 20° C.	Remarks.
21350	Columbus Canning Co	1.086	*	*	Per cent of fields with moulds, 8.1; many yeasts.
21353	Loudon Packing Co	1.042	86.0	54.0	Very few yeasts present; per cent of fields with moulds 2.0.
21356	Loudon Packing Co	1.046	82.0	54.7	Very few yeasts present; per cent of fields with moulds, 6.3.
22119	Sent in from Indianapolis				Fields showing moulds, 18.0; very many bacteria and yeasts present.

*Determination made on liquor.

WHISKY.

Of the 15 samples of whisky examined, 13 were legal and 2, or 13.3 per cent., illegal. The illegal samples were so classed because of the presence in one instance of strychnine and the other of arsenic trioxide. In both cases it appeared that the addition of the poison had been made with criminal intent.

WHISKY—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Specific Gravity at 20° C.	Per Cent. of Alcohol by Weight.	Per Cent. of Alcohol by Volume.	Extract.
21533	Sent in from Indianapolis	.9465	....	43.10	0.2756
21839	Sent in from South Bend	.9255	46.50	56.70	.5930
21840	Sent in from Indianapolis	.9429	....	....	.1440
21841	Sent in from Indianapolis	.9385	....	....	.0960
22121	Sent in from Pendleton	.9202	47.10	54.80	
22226	Sent in from Ridgeville	....	....	....	*
22553	H. C. Knode & Co., Indianapolis	.9304	42.35	49.85	.1425
23254	Sent in from Indianapolis	.9380	38.60	45.81	.0804
23255	Sent in from Freeport, Pa	.9304	42.35	49.85	.1665
23256	Sent in from Freeport, Pa	.9295	42.75	50.28	.0975
23257	Sent in from Freeport, Pa	.9280	43.50	51.08	.1170
23258	Sent in from Freeport, Pa	.9220	46.30	54.03	.1540
23259	Sent in from Freeport, Pa	.9220	46.30	54.03	.1800

*No methyl alcohol present.

WHISKY—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Remarks.
22600	Sent in from Hazleton	Strychnine present.
23028	Sent in from Petersburg	Arsenic trioxide present.

WINES.

But 3 wines were examined, and in each case the composition was satisfactory.

WINES.

Laboratory No.	Manufacturer or Retailer.	Sp. G. at 20° C.	Alcohol by Weight.	Alcohol by Volume.	Extract.	Remarks.
22216	W. H. Stemm, North Vernon	....	....	7.7	....	Legal.
22217	W. H. Stemm, North Vernon	....	....	7.7	....	Legal.
23136	H. O. Chamberlain, Indianapolis	.9770	27.2	33.0	....	Legal.

VINEGAR.

Seventy-five samples of so-called cider vinegar were examined during the year. Many of these samples were sent in by grocers who were not sure as to the composition of the goods they had in stock. Other samples were sent in by farmers who wished to know whether or not their vinegar was sufficiently matured to be legally salable. Of the 75 samples examined, 24 were legal and 51, or 68 per cent., illegal. It is evident from the examination of these vinegars that a great deal of the cider vinegar offered for sale is immature and that much vinegar still comes to market under the name of cider which is as a matter of fact an artificial product.

CIDER VINEGAR—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Acidity.	Solids.	Ash.	Alkalinity of Ash.	Color.	Lead Acetate Precipitate	Polarization.
21009	Geo. Tesmer	Noblesville	4.10	2.450	.421	40.	Normal	Light	—1.5
21157	Foagares Bros.	Wabash	4.90	3.810	.450	40.	Normal	Light	— .6
21413	Sent in from	Indianapolis	4.04	1.640	.360	30.	Normal	Medium	— .6
21519	Sent in from	Mulberry	4.64						
21530	Sent in from	Aurora	4.72	3.710	.305			Medium	
21531	Sent in from	Aurora	4.91	2.030	.274			Heavy	
21532	Sent in from	Aurora	5.59	2.650	.380			Heavy	
21798	W. H. Jirkman	Pendleton	4.41	1.660	.200	12.			*2.0
22369	F. F. Richardson	Bedford	4.08	1.970	.302	30.	Normal	Medium	+0.
22371	Crescent Grocery Co.	Bedford	4.61	1.779	.349	30.	Normal	Medium	— .4
22374	D. K. Owen & Son	Bedford	4.09	1.765	.368	32.	Normal	Heavy	—1.8
22530	Kilgers & Phillips	Jeffersonville	4.77	2.159	.321	30.	Normal	Light	—1.2
22531	Best Bros.	Jeffersonville	4.76	2.321	.389	28.	Normal	Light	—1.4
22739	Sent in from	Tell City	4.56	1.960	.300	28.	Normal	Heavy	—1.2
22882	Sent in from	Indianapolis	7.18						
23240	Sent in from	Indianapolis	4.06	2.118	.485	28.	Normal	Medium	—1.6
23336	Sent in from	Decatur	4.91	1.168	.242	36.	Normal	Light	— .6
23337	Niblack & Co	Decatur	4.29	1.732	.341	36.	Normal	Medium	—1.4
23455	Sent in from	Evansville	6.50	3.967	.497	30.	Normal	Medium	— .8
23487	Sent in from	Odon	6.26	2.229	.462	36.	Normal	Medium	—1.6
23830	City Market	Indianapolis	4.57	2.201	.282	30.	Normal	Medium	—1.0
23889	T. C. Cowgill	Wabash	4.21	2.965	.610	30.	Normal	Medium	*0.
23896	Thompson & Wright	Wabash	4,08	3.210	.505	44.	Normal	Heavy	—1.6
23860	Sent in from	Greenfield	4.58	1.650	.230	16.	Normal	Slight	*.6

*Properly labeled. A second-pressing vinegar.

CIDER VINEGAR—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Acidity.	Solids.	Ash.	Alkalinity of Ash.	Color.	Lead Acetate Precipitate.	Polarization.	Remarks.
20803	E. A. Andrews	Indianapolis	4.55	2.130	.185	14.6	Normal	Slight	—2.2	Low in alkalinity.
21193	Clancy Bros	Logansport	4.04	1.727	.214	19.0	Normal	Slight	—1.5	Low in alkalinity.
21292	Mr. Couts	Worthington	2.58	2.17	.348	34.0	Normal	Slight	— .7	Low in acidity.
21411	Sent in from	Marion	4.09	.403	.065	7.0	C. W. C.	None	+ .8	Not a cider vinegar.
21412	Sent in from	Columbus	5.03	1.150	.308	30.0	Normal	Slight	— .8	Total solids low.
21414	Sent in from	Connersville	3.55	2.575	.345	36.0	Normal	Medium	—2.0	Low in acidity.
21415	Sent in from	Odon	1.94	1.265	.270	26.0	Normal	Medium	—1.0	Low in acidity.
21493	Sent in from	Columbus	3.82	.845	.235	22.0	Normal	Slight	+0.0	Not a pure cider vinegar.
21627	Sent in from	Manchester	.48	1.780	.158	28.0	Normal	Slight	— .2	Low in ash.
21803	Sam Brown	Anderson	3.93	2.510	.140	10.0	Normal	Heavy	+ .8	Not a cider vinegar.
22036	W. O. Blakely & Sons	Bloomington	4.01	2.677	.855	18.0	Normal	Medium	—1.2	Low in alkalinity.
22037	J. W. Freeman	Bloomington	3.90	1.978	.302	14.0	Normal	Heavy	—1.4	Low in alkalinity and acidity.
22038	W. W. Wicks	Bloomington	4.52	2.342	.360	20.0	Normal	Heavy	—1.4	Low in alkalinity.
22039	Collins-Seidle	Bloomington	4.02	2.192	.343	20.0	Normal	Medium	—1.0	Low in alkalinity.
22106	Sam Brown	Anderson	4.00	1.950	.203	21.0	Normal	Medium	— .2	Low in alkalinity.
22122	Sent in from	North Salem	1.37	4.863						Not a vinegar.
22208	J. A. Bobrink	Lawrenceburg	3.75	.131	.021	1.0	C. W. C.	None	+1.8	Not a cider vinegar.
22368	Wilson Dept. Store	Bedford	5.65	.302	.118	1.0	C. W. C.	None	+0.0	A colored distilled vinegar.
22370	J. W. Beard	Bedford	4.25	1.820	.429	20.0	Normal	Heavy	—1.8	Low in alkalinity.
22372	Honan Field	Bedford	4.73	1.776	.278	6.0	Normal	Very slight	+0.0	Low in alkalinity.
22373	L. E. Rainbolt	Bedford	4.94	2.240	.389	6.0	Normal	Light	— .8	Low in alkalinity.
22375	Gainey Grocery Co	Bedford	4.07	1.856	.368	24.0	Normal	Light	— .6	Low in alaklinity.
22532	M. J. Keher	Jeffersonville	5.69	2.264	.363	20.0	Normal	Very slight	—2.8	Low in alkalinity.
22694	Sent in from	South Bend	2.67	1.224	.306	26.0	Normal	Medium	— .6	Low in acidity.
22832	Geo. Godwin	Washington	3.47	4,795	.423	28.0	Normal	Very light	+2.4	Not a cider vinegar.
22839	Mal & Eskridge	Washington	4.15	2.325	.287	24.0	Normal	Heavy	—1.8	Low in alkalinity.
22930	Sent in from	Indianapolis	3.33							Low in acidity..
23022	Sent in from	Yorktown	1.49							Low in acidity.
23028	Holblich Bros	Lafayette	3.83	1.821	.371	16.0	Normal	Heavy	—1.2	Low in alkalinity.
23144	Sent in from	Indianapolis	4.11	1.850	.385	26.0	Normal	Medium	— .4	Low in alkalinity.
23238	Sent in from	Poseyville	1.84	2.505	.388	15.0	Normal	Very heavy	—1.0	Low in acidity.
23239	Sent in from	Indianapolis	5.03	2.274	.370	24.0	Normal	Light	—2.0	Low in alkalinity
23241	Sent in from	Indianapolis	4.02	1.955	.354	22.0	Normal	Light	—1.2	Low in alkalinity.
23305	Sent in from	Indianapolis	3.96							Low in acidity.
23334	Sent in from	Odon	2.45							Low in acidity.
23454	Sent in from	Evansville	2.64	1.798	.349	24.0	Normal	Medium	— .8	Low in acidity.
23456	Sent in from	Evansville	3.90	2.923	.485	32.0	Normal	Medium	—1.6	Low in acidity.
23502	Sent in from	Indianapolis	3.62							Low in acidity.

CIDER VINEGAR—ILLEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Acidity.	Solids.	Ash.	Alkalinity of Ash.	Color.	Lead Acetate Precipitate.	Polarization.	Remarks.
23503	Sent in from	Indianapolis	3.13							Low in acidity.
23504	Sent in from	Indianapolis	1.76							Low in acidity.
23585	Sent in from	Columbus	3.65	1.045	.235	24.0	Normal	Medium	—1.	Low in acidity.
23586	Sent in from	Columbus	5.03	1.236	.306	33.0	Normal	Medium	—1.2	Low in total solids.
23906	M. D. Moore	Waveland	4.04	2.155	.270	26.0	Normal	Slight	— .4	Low in alkalinity.
23908	Sent in from	Martinsville	1.26	2.090	.248	24.0	Normal	Heavy	+1.	Not a cider vinegar.
23909	Sent in from	Martinsville	2.12	3.155	.330	30.0	Normal	Heavy	+ .6	Not a cider vinegar.
23959	Sent in from	Poseyville	1.43	4.580	.415	30.0	Normal	Heavy	—1.2	Not a vinegar.
23965	Sent in from	Mitchell	1.73	1.050	.290	30.0	Normal	Medium	—1.6	Not a legal vinegar.
23967	Sent in from	Rochester	1.13	1.745	.290	34.0	Normal	Heavy	—1.0	Not a vinegar.
24065	Sent in from	Indianapolis	3.50	2.302	.327	34.0	Normal	Medium	—1.	Low in acidity.
24178	Sent in from	Plainfield	3.80	1.245	.270	26.0	Normal	Heavy	— .8	Low in solids.
24202	Sent in from	Guilford	3.95	3.645	.083	20.0	Normal		+7.2	Low in acidity.

DISTILLED VINEGAR.

But 5 samples of distilled vinegar were examined, and all were classed as legal.

DISTILLED VINEGAR—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Acidity.
21185	Spangler & Jones	Deer Creek	4.34
23971	Sent in from	Indianapolis	4.80
23973	Sent in from	Indianapolis	10.08
23974	Sent in from	Indianapolis	10 24
23975	Sent in from	Indianapolis	10.24

DRUGS.

The chemist in charge of drug control investigations is confronted with the necessity of confining his efforts year after year to the analysis of well-known pharmaceuticals which have been and continue to be largely adulterated, such as tincture of iron, tincture of iodine and spirits of camphor, or of departing from such well-defined paths and taking up special problems.

The control of standard pharmaceuticals is a matter of routine investigation, but the study of toilet preparations and patents, and the so-called advertised proprietaries, requires original work in fields little understood.

During the past year the drug laboratory has given much time to such work in the endeavor not only to protect the consumer against the use of misbranded and mislabeled and possibly deleterious drugs, but as well of protecting him against the fraudulent practices of the manufacturer who knows the value of publicity and who by profitable experience has learned how to sell a five-cent article for five dollars. In addition to such work many samples of great variety have been submitted by physicians who for one reason or another have desired to know the character of the drug they were using.

During the year 399 drug samples have been examined. Of this number 257 were passed as legal and 142, or 35.5 per cent., as illegal. Included in the list are 27 linseed oils, in most cases submitted by painters to determine whether or not the goods they were buying conformed to the linseed oil law, a statute enacted some years ago and the enforcement of which is made one of the duties of the State Board of Health. Of the 27 samples examined, 16 were legal and 11, or 40.7 per cent., illegal. Such a showing is a convincing argument for a stringent enforcement of the linseed oil law.

Those who have to do with the analysis of samples submitted to the drug laboratory constantly marvel at the character of the goods which are sold under disguising names for high prices. The waste of money in the purchase of patents, proprietaries and toilet preparations is astonishingly great, and in spite of the activities of the Federal Government and State departments, the people are as credulous as before any attempt was made to enlighten them.

The better trained in schools and the world go to their doctor for their cures; but a very large and, I fear, but slowly diminishing number still turn to the fakir on the curbstone and his dollar-a-bottle decoction of nameless herbs or to the touted cures advertised in the newspaper and cheap magazines, sold by seductive agents or handed over the counter by the druggist.

Indeed, the surprising fact is that in spite of the recent spread of information about right living, the more general knowledge of the principles which govern health, the origin of disease and the futility of home treatment by much advertised cure-alls—the business of the patent and proprietary medicine manufacturer is greater than ever before—the amount of capital engaged is larger, the number of employes is greater, and logically the number of deluded victims must be greater.

E. Dana Durand, Director of the Bureau of the Census, has recently issued a preliminary statement giving general statistics of the patent medicine industry for the years 1904 and 1909. This includes a period of two years prior to the passage of the Food and Drug Law, also one of three years during which the business was operated under the regulations imposed by it. During the five years there was an increase of 31 per cent. in the number of establishments engaged in the manufacture of bitters, tonics, patent medicines and pills, salves, tooth pastes and powders, hair tonics and dyes and other preparations of the drug store. The capital invested increased 32 per cent., amounting to $100,000,000 in 1909; the value of the produce increased 21 per cent., totaling to $142,000,000 in 1909. The salaries and wages paid increased 50 per cent. during the five-year period. The average number of wage earners increased 12 per cent., and the number of salaried officials and clerks 70 per cent. These figures, startling in their magnitude, do not indicate diminution of the patent medicine output.

The passage of the Food and Drug Law did not loosen the patent medicine grip on the large class of the constitutionally unwell. It did compel changes in formulas, in some cases the elimination of vicious habit-forming drugs, and in every case the declaration of opiates and alcohol. It did make a surprising change in labels. Many a "sure cure for consumption, stomach and kidney diseases" changed in a night to a "remedy for" such conditions. Many a highly alcoholized sarsaparilla, much sought for and extensively used for its stimulating qualities, immediately lost its vital properties and to those who have learned to love it, as shelf upon shelf of empty bottles in the closet once testified, became weak and ineffective.

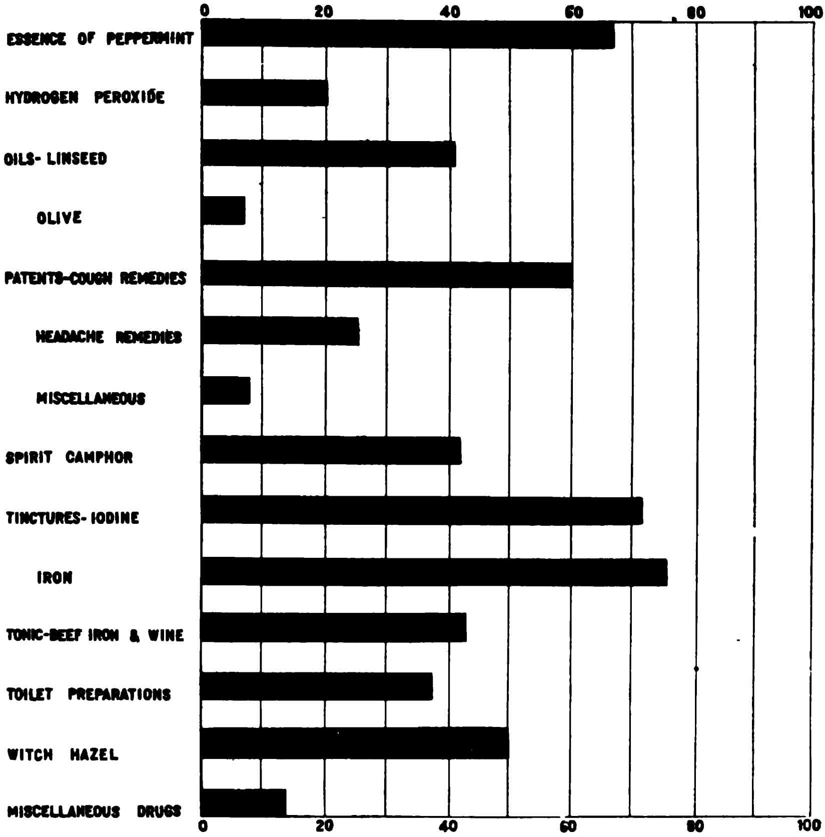
Some of the most successful though most worthless frauds were drummed out of existence. The dilute sulphurous acid concoctions costing less than a cent a bottle and selling for a dollar, the cheap whisky mixtures, the dangerous cancer cures, disappeared. But in their stead there came and flourishes a host of no less worthless and deceitful pills and powders, oils, tablets, syrups, high priced, crudely compounded, skilfully advertised agents for the banishment of disease.

It is fortunate, indeed, that about 90 per cent. of those really seriously ill recover without any medical attention. It is this fact that brings the startling crop of testimonials to miraculous cures and "snatched from the grave" stories. Those who recover are not injured by their doses of cure-alls except in respect to their pocketbooks, but the great danger is done the 10 per cent. who, while really in need of expert medical attention, do not seek it until trifling ailments have progressed to serious condition. It is not the danger of forming drug or liquor habits unawares that makes the widespread and ever growing sale of patent medicines a real menace—it is the false sense of safety and confidence given the user of these unknown drugs which ultimately leads him into permanently impaired health.

Just so long as the shrewd and crafty manipulator of human gulibility turns dimes and dollars into diamonds for patent medicine manufacturers, the business will flourish and increase in magnitude. It will not be possible to check its growth until laws are enacted which not only prohibit misstatements and false claims for virtues on the label, but the advertisement of medicines or remedies intended for the alleviation or cure for diseases which are not honestly compounded after formulas of known merit. Fear and pain make sane people abandon ordinary caution and sound judgment and flee in vain hope to every preparation which promises them relief. Any diminution in the sale of patent medicines which cater to this mingled fear and hope must come as a result of a greater knowledge on the part of the people of the origin of disease and the manner by which drugs and medicines operate to cure it.

PERCENTAGE OF ADULTERATION OF DRUGS IN INDIANA

1912



RESULT OF DRUG ANALYSES.

Articles Examined.	Legal.	Illegal.	Total.	Per Cent. Adulterated.
Alcohol	2	....	2	0.0
Ammonia	....	4	4	100.0
Bay Rum	3	....	3	0.0
Essence of Peppermint	1	2	3	66.6
Hydrogen Peroxide	8	2	10	20.0
Miscellaneous Drugs	52	8	60	13.3
Oils:				
Linseed	16	11	27	40.7
Olive	14	1	15	6.6
Patent Medicines:				
Cough Remedies	22	33	55	60.0
Headache Remedies	6	2	8	25.0
Miscellaneous Patents	35	3	38	7.9
Paregoric	7	....	7	0.0
Quinine Tablets	....	3	3	100.0
Sweet Spirits of Nitre	....	2	2	100.0
Syrup—Iodide of Iron	2	....	2	0.0
Spirit:				
Camphor	15	11	26	42.3
Turpentine	4	....	4	0.0
Tinctures:				
Ginger	3	1	4	25.0
Iodine	8	20	28	71.4
Iron	1	3	4	75.0
Tonics:				
Beef, Iron and Wine	4	3	7	42.8
Toilet Preparations	51	30	81	37.0
Witch Hazel	3	3	6	50.0
Total	257	142	399	35.5

ALCOHOL.

But 2 samples of alcohol were analyzed during the year, both of which were of satisfactory quality.

ALCOHOL—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Alcohol by Volume.	Alcohol by Weight.
21818	Geo. W. Dalton, Coal City	.8130	94.56	91.8
22235	C. W. Johnson, Nappanee	.8125	94.70	92.0

AMMONIA—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. Ammonia Gas.	Remarks.
21874	Sent in from Indianapolis	.61	Not a commercial ammonia, as NH_3 content is very low.
23499	Sent in from Ft. Wayne	8.00	Below standard.
24185	Sent in from Ft. Wayne	5.60	Below standard.
24186	Sent in from Ft. Wayne	2.83	Below standard.

BAY RUM COMPOUND—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Alcohol.	Methyl Alcohol.
22541	Knox & Co., Indianapolis	.9659	25.9	Absent.
22885	Indianapolis Dry Goods Co., Indianapolis	.9514	36.0	Absent.
22886	Indiana Dry Goods Co., Indianapolis	.9852	9.4	Absent.

BEEF, IRON AND WINE.

Of the 7 samples of beef, iron and wine examined, 4 were classed as legal and 3 illegal. The illegal samples were so listed because of an insufficient quantity of beef as shown by the low nitrogen content, or, as in one instance, the presence of an insufficient quantity of ferric chloride.

BEEF, IRON AND WINE—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Alcohol.	Iron 50 cc.	Nitrogen, 50 cc.
20282	Chas. Leich & Co., Evansville	15.65	.0786	.1060
20297	Chas. Leich & Co., Evansville	19.64	.0636	.1431
21087	Cullom Drug Co., Frankfort	19.64	.0708	.1337
22476	J. Keene, Indianapolis	15.35	.0876	.1153

BEEF, IRON AND WINE—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Alcohol.	Iron, 50 cc.	Nitrogen, 50 cc.	Remarks.
20245	Allen-Pfeiffer Chemical Co., St. Louis, Mo	14.00	.0780	.0385	Low in nitrogen.
21137	Gaylord & Bambauer, Wabash	14.40	.0721	.0462	Low in nitrogen.
21566	Agness Drug Co., Converse	19.90	.0444	.0879	Low in iron.

COUGH REMEDIES.

Of the 55 preparations sold as cough remedies analyzed, 22 were legal, and 33, or 60 per cent., illegal. In every instance the preparations were classed as illegal because of error in labeling. Many of the goods were misbranded as to the chloroform content, others neglected to state the alcohol content. In many instances preparations containing both alcohol and chloroform gave no indication of that fact. The highest alcohol content noted in any cough preparation was 15.3 per cent. The highest chloroform content was 6.8 minims per ounce. Most of the cough remedies analyzed contained large quantities of sugar syrup combined with extract of pine or tar. The remedial agent is usually chloroform or traces of morphine.

COUGH REMEDIES—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Alcohol.	Chloroform, Minims Per Oz.	Remarks.
20579	Frank E. Ross, Noblesville	1.2407	15.30		Label O. K.
21585	Ed. Ferger, Indianapolis	1.2256			
21655	F. M. Busby, Lapel	1.0800	4.20		Label O. K.
21896	O. E. Dunn, Spencer				
22055	J. H. Walters, Middlebury	1.2246	.61	6.8	Properly labeled.
22057	Ballon & Antonides, Lagrange	1.2760	0.00		Properly labeled.
22248	F. D. Warner, New Carlisle	1.2680	7.26		Properly labeled.
22249	F. D. Warner, New Carlisle	1.3090	1.00		Properly labeled.
22304	E. M. Schnaibler, Lafayette	1.1920	6.88		Properly labeled.
22307	Bartless Drug Co., Lafayette	1.2390	.52		Properly labeled.
22340	Frank Brown, Knox	1.2690	.52	2.7	Label O. K.
22486	S. S. Kresge, Indianapolis			5.3	Label O. K.
22490	S. S. Kresge, Indianapolis	1.2140	2.40		Label O. K.
22665	Colwell Austin, Anderson	1.0305	.50		Label O. K.
22971	Herbert Knight, Summitville	1.2970	2.62	4.2	Label O. K.
23064	Dreier Bros., Ft. Wayne	1.1390			
23047	Shiner & Sowers, Hartford City	1.2570	10.16		Label O. K.
23116	L. G. Kramer, Michigan City	1.2870	8.08		Label O. K.
23192	H. Pfofflin, Indianapolis	1.2710			
23210	C. T. Bedford, Indianapolis	1.2045	3.57		Label O. K.
23212	Jno. Hook, Indianapolis				
19282	Frank E. Hanson, Peru				

COUGH REMEDIES—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Per Cent. of Alcohol.	Chloroform Minims Per Oz.	Remarks.
21187	Shanks & Co., Deer Creek	1.2997	7.00	2.21	Misbranded as to chloroform content.
21581	Geo. Weber, Indianapolis	1.2005	1.06	1.30	Misbranded as to chloroform content.
21582	Geo. Weber, Indianapolis	1.2800	1.06		Alcohol content ½ of statement on label.
21583	Haags Drug Co., Indianapolis	1.3020	0.00	.96	Misbranded as to chloroform content.
21584	Haags Drug Store, Indianapolis	1.3300	0.00	2.66	Misbranded as to chloroform content.
21586	Ed. Ferger, Indianapolis	1.2585	5.34	.19	Misbranded as to chloroform content.
21587	Pinks Pharmacy, Indianapolis	1.1644		.51	Misbranded as to chloroform content.
21588	W. H. Roberts, Indianapolis	1.2785	3.90	.19	Misbranded as to chloroform content.
21603	Hodley Bros., Indianapolis	1.2875	5.50	1.68	Misbranded as to chloroform content.
21604	O. T. Passmore, Indianapolis	1.2690	6.24	.60	Misbranded as to chloroform content.
21625	Geo. Schillinger, Indianapolis	1.2850	0.00	.27	Misbranded as to chloroform content.
21626	C. L. Jackson, Indianapolis	1.2500	6.54	.83	Misbranded as to chloroform content.
21651	Twilling Drug Co., Tipton	1.2600	0.00	.14	Misbranded as to chloroform content.
21652	G. M. Twilling & Co., Tipton	1.2326	2.30	.49	Misbranded as to chloroform content.

COUGH REMEDIES—ILLEGAL—Continued.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Per Cent. of Alcohol.	Chloroform, Minims Per Oz.	Remarks.
21666	Arthur W. Jones, Brazil	1.2805	8.00	....	Alcohol content too high.
21807	A. B. Carr, Indianapolis	1.2100	4.40	.75	Misbranded as to chloroform content.
22053	L. A. Congdon, Bristol	1.3200	.36	6.68	Excess of chloroform.
22305	Hogan Drug Co., Lafayette	1.0915	13.10	....	Illegal as to chloroform content.
22117	Cline & Co., Sheridan	1.2677	2.40	1.36	Illegal as to statement of chloroform.
22292	T. L. Haywood, Lafayette	1.3650	.88	2.46	Illegal as to chloroform content.
22308	Bartlett Drug Co., Lafayette	1.2710	.88	1.27	Misbranded as to chloroform content.
22426	Evans & Evans, Marion	1.0833	8.80	.20	No alcohol declared on label.
22718	Warne & Morgan, Hobbs	1.3030	2.08	....	Misbranded; alcohol low.
22896	E. Coyner, Colfax	1.1980	5.82	....	Illegal as to label.
22997	E. P. Whinrey, Muncie	1.1970	8.08	2.70	No statement of alcohol or chloroform on label.
23055	A. C. Beckstein, Huntington	1.1686	4.46	....	No statement of alcohol on label.
23057	Bradley Bros., Huntington	1.3160	1.80	....	No alcohol stated on label.
23118	A. E. Kepert, Hammond	1.2740	8.80	1.40	Alcohol or chloroform not stated on label.
23119	L. J. Ostrowski, Hammond	1.2820	5.80	2.50	Misbranded.
23120	W. C. Norris, Hammond	1.2740	6.70	1.40	Alcohol and chloroform not stated.
23193	L. S. Stockman, Indianapolis	1.2870	2.62	....	No alcohol declared on label.
23194	L. S. Stockman, Indianapolis	1.2690	3.42	....	No alcohol declared on label.
23263	F. R. Wedmer, Dayton	1.2830	5.24	1.40	Misbranded as to chloroform content.

HEADACHE REMEDIES.

Of the 8 samples analyzed, 6 were classed as legal and 2, or 25 per cent., illegal. The illegal samples were so classed because the acetanilid content was not declared as required by law. In every instance the remedial agent was acetanilid usually compounded with caffein and sodium bicarbonate.

HEADACHE REMEDIES—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Grains per Tablet.			Label.
		Acetanilid.	Caffein.	Sodium Bicarbonate	
20293	Chas. Leich Co., Evansville	3.29	.249	2.245	Correct.
20585	Haines & Glenn, Noblesville	2.88	.756	1.123	Correct.
21085	Bud Ransom, Frankfort	3.07	.063	3.258	Correct.
23220	Wm. Burget, Indianapolis	1.85	.37	.750	Correct.
23273	Haines & Glenn, Noblesville	2.89	.58	1.100	Correct.

HEADACHE REMEDIES—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Acetanilid.	Per Cent. of Caffein.	Per Cent. Sodium Bicarbonate.	Remarks.
23340	T. W. Lytle, Rushville	69.66	....	15.33	Misbranded.
23435	J. D. King, Terre Haute	40.11	3.91	40.48	Misbranded.

HYDROGEN PEROXIDE.

Of the 10 samples of hydrogen peroxide examined, 8 were legal and 2 illegal. These samples contained slightly less quantities of hydrogen peroxide than that required in a standard preparation.

HYDROGEN PEROXIDE—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of H_2O_2.	Per Cent. of U. S. P.	Volumes of Available Oxygen.	Acidity 25 cc. H_2O_2.	Grams Solids per 20 cc.	Acetanilid.
21437	John Devine, Peru	2.94	98.0	9.67	2.5	.0252	Declared.
21441	John Devine, Peru	2.88	96.0	9.47	3.5	.0236	Declared.
21561	Mauring & Son, Greentown	3.07	102.3	10.10	3.5	.0209	Declared.
22492	S. S. Kresge, Indianapolis	2.87	96.6	9.45	3.5	.0165	Declared.
22560	Knox & Co., Indianapolis	3.00	100.0	9.87	3.2	.0242	Declared.
22884	Indiana Dry Goods Co., Indianapolis	2.82	94.0	9.27	4.2	.0372	Declared.
22892	Chas. Reist, Flora	3.03	101.0	9.96	2.7	.0203	Declared.
22895	Geo. Pendry, Colfax	2.98	99.6	9.80	4.4	.0226	Declared.

HYDROGEN PEROXIDE—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of H_2O_2.	Per Cent. of U. S. P.	Volumes of Available Oxygen.	Acidity 25 cc. H_2O_2.	Grams Solids per 20 cc.	Remarks.
21339	James Stevens Co., Greencastle	2.65	87.6	8.65	1.75	.0532	Below standard.
21445	Brunker, Indianapolis	2.50	83.6	8.22	4.25	.0988	Below standard.

LINSEED OIL.

Of the 27 samples of linseed oil examined, 16 were legal and 11, or 40.7 per cent., illegal. Nearly every sample analyzed was submitted by dealers or painters who suspected the addition of foreign oils. Of the adulterated samples 4 contained mineral oil. One sample was a fish oil, and another contained a large amount of foreign marine animal oil. Three samples contained some foreign seed oil, the character of which was not determined. The estimation of the hexabromide factor, when taken in conjunction with the saponification number, is usually a sufficient evidence to determine the character of the sample.

LINSEED OIL—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Where Collected.	Saponification Number.	Hexabromides.
21139	Gaylord & Baumgauer	Wabash	185.9	38.4
21578	Sent in from	Indianapolis	188.7	33.6
21732	Sent in from	Indianapolis	191.3	39.2
21737	Sent in from	Indianapolis	183.6	35.3
21738	Sent in from	Anderson	193.6	39.2
21744	Sent in from	Frankfort	190.9	41.6
21854	Geo. A. Walker & Co.	Loogootee	192.5	48.8
22166	Connor Drug Co.	New Albany	187.4	37.8
23244	Sent in from	Indianapolis	191.8	46.0
23245	Sent in from	Indianapolis	184.3	45.5
23247	Sent in from	Kewanna	187.3	51.3
23248	Sent in from	Kewanna	183.8	42.0
23428	Phillip Huesser	Chrisney	190.5	35.7
23500	Sent in from	Fairmount	192.2	48.1
23907	Sent in from	Indianapolis	191.4	41.8
24045	Sent in from	Rensselaer	174.3	37.4

LINSEED OIL—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Saponification Number.	Hexabromides.	Remarks.
20744	Builders Supply Co	172.2	1.8	Adulterated with mineral oil.
20857	Sent in from Indianapolis	189.2	3.1	Adulterated with foreign seed oil.
20917	Sent in from Greentown	178.5	31.8	Seems to be largely, if not entirely, fish oil.
21512	Sent in from Berne	161.2	....	Adulterated with mineral oil.
23243	Sent in from Indianapolis	195.5	44.0	Some foreign marine animal oil present.
23333	Sent in from Indianapolis	165.9	40.1	Does not pass requirements for pure linseed oil.
23351	Sent in from Huntingburg	185.1	17.0	Not a pure linseed oil.
23518	Sent in from Indianapolis	101.7	18.8	Adulterated with mineral oil.
23593	Sent in from LaGrange	110.6	....	Adulterated with mineral oil.
23962	Sent in from Veedersburg	187.6	18.1	Adulterated with some foreign seed oil.
24063	Sent in from Alexandria	190.8	16.8	Adulterated; foreign seed oil.

OLIVE OIL.

But one of the 15 samples of olive oil analyzed during the year was adulterated. This oil was not olive oil, but cotton seed oil, formerly much used as a substitute.

OLIVE OIL—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. G. at 20° C.	Abbe 20°.	Saponification Number.	Halphen's Test.
21430	W. T. Hanson, Peru	.9136	1.4682	....	Negative.
21451	J. R. Mason, Shipshewana	.9133	1.4685	....	Negative.
21866	M. Chenneour & Son, Roanoke	.9138	1.4687	187.3	Negative.
21872	J. J. Stoeher, Garrett	.9140	1.4680	191.1	Negative.
22046	S. W. Beidler, Waterloo	.9165	1.4692	196.3	Negative.
22049	Chas. T. Phillips, Butler	.9125	1.4685	191.5	Negative.
22242	Fisher Bros., Bremen	.9130	1.4678	193.0	Negative.
22299	J. M. Baker, W. Lafayette	.9130	1.4685	191.3	Negative.
22942	Sent in from Brazil	.9133	1.4681	191.0	Negative.
22980	E. N. Pierce, Jonesboro	.9190	1.4718	190.3	Negative.
22983	Doleman & Reiley, Jonesboro	.9130	1.4685	189.2	Negative.
23294	Sent in from Indianapolis	....	1.4677	....	Negative.
23501	Sent in from South Bend	....	1.4678	189.1	Negative.
23913	Sent in from Indianapolis	....	....	....	*

*Tested for artificial coloring.

OLIVE OIL—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. G. at 20° C	Abbe 20°.	Saponification Number.	Halphen's Test.
21461	J. R. Mason, Shipshewana	.9212	1.4725	....	Positive.

PAREGORIC.

But 7 samples were analyzed during the year, all of which were found to be properly labeled and to contain the required opium content.

PAREGORIC—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Alcohol Found.	Label.	
			Per Cent of Alcohol.	GrainsOpium per oz.
21431	W. T. Hanson, Peru	41.8	45.0	1.8
21669	O. M. Stadler, Prairie City	38.2	45.0	2.0
21875	Davis & Wenier, Morgantown	40.9	46.5	1.9
22240	C. W. Johnson, Nappanee	49.2	47.0	1.9
22241	Fisher Bros., Bremen	42.5	46.5	1.9
22244	Koontz Bros., Plymouth	42.3	47.0	1.9
22247	F. D. Warner, New Carlisle	52.0	45.0	1.9

PATENT MEDICINES.

Under the classification of miscellaneous patent medicines, 38 samples were analyzed, of which 35 were labeled in conformity with the law and 3 only were misbranded. The fact that these preparations are passed as legal must not be taken as evidence of the approval of the department. As a matter of fact almost without exception the goods have little or no value and are sold at exorbitant prices.

A special report concerning some of these patents will be found on page 69.

PATENT MEDICINES—LEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Where Collected.	Label.
20288	Knoxit	Chas. Leich & Co	Evansville	Correct.
21589	Gon-Kure	Chas. Leich Co	Evansville	Correct.
22019	Stomach Remedy	Sent in from	Indianapolis	Correct.
22043	Horse Liniment	Sent in from	New Ross	Correct.
22306	Bad-Em-Salz	Hogan Drug Co	Lafayette	Correct.
22487	Feno-Thol Laxative Tablets	S. S. Kresge	Indianapolis	Correct.
22516	Stomach Remedy	Sent in from	Gentryville	Correct.
22517	Stomach Remedy	Sent in from	Gentryville	Correct.
22518	Stomach Remedy	Sent in from	Gentryville	Correct.
23001	Golden Remedy	C. C. Hodley	Anderson	Correct.
23004	Joseph's Throat Ease	C.A. Henderson Chem. Co	Anderson	Correct.
23013	Prevents Disease	Chas. O'Brien	Anderson	Correct.
23115	Antiseptic compound	L. G. Kramer	Michigan City	Correct.
23208	Co-Epo Salts	W. A. Dodge	Indianapolis	Correct.
23054	Kaylor's Gargle	Milo Kaylor	Huntington	Correct.
23058	McLin's Antiseptic	Bradley Bros	Huntington	Correct.
23059	Nervine	Christen Bros	Ft. Wayne	Correct.
23213	Dr. Hiatts Germicide	Julius Hoag	Indianapolis	Correct.
23218	Rheumatic Tablets	Wm. Burget	Indianapolis	Correct.
23219	Uterine Wafers	Wm. Burget	Indianapolis	Correct.
23278	Grace's Mineral Salts	R. M. Floyd	Shelbyville	Correct.
23343	Raymond's Cascara Tablets	Hargrove & Mullin	Rushville	Correct.
23345	Raymond's Anti-Grippe Tablets	Hargrove & Mullin	Rushville	Correct.
23439	Digestive Biscuits	Buntin Drug Co	Terre Haute	Correct.
23528	Vital Air (disinfectant)	Sent in from	Peru	Correct.
23534	Milk's Emulsion	O. C. Shandy	Terre Haute	Correct.
23596	Vilane Powder	A. K. Drug Co	Indianapolis	Correct.
23600	Toris Compound	A. K. Drug Co	Indianapolis	Correct.
23601	Sulpherb	A. K. Drug Co	Indianapolis	Correct.
23604	Reutone	A. K. Drug Co	Indianapolis	Correct.
23609	Sarsene	A. K. Drug Co	Indianapolis	Correct.
23643	Parmotis	A. K. Drug Co	Indianapolis	Correct.
23961	Asthma Cure	Sent in from	New Castle	Correct.
23964	Charcoal Tablets	Sent in from	Indianapolis	Correct.
23011	Opaline Suppositories	Chas. O'Brien	Anderson	Correct.

PATENT MEDICINES—ILLEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Where Collected.	Label.
23015	Hcl for Corns	Chas. O'Brien	Anderson	Misbranded.
23111	Corn Remedy	Oth C. Bastian	South Bend	Misbranded.
23491	Lauts's Emulsion	Frerl & Mason	Marion	Misbranded.

TINCTURES.

TINCTURA ZINGIBERIS.

TINCTURE OF GINGER.

Of the 4 samples of tincture of ginger analyzed, 1 sample was illegal in that it contained less than the required amount of alcohol soluble solids and an excess amount of water soluble solids.

TINCTURE OF GINGER—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Grams Extract 100 cc.	Alcohol by Volume.	Alcohol on Label.
21465	J. R. Watson, Warsaw	.8193	1.326	90.1	93 per cent.
22427	Home Corner Grocery Co., Marion	.8226	1.749	92.7	94 per cent
22429	Home Corner Grocery Co., Marion	.8371	1.666	87.5	93 per cent

TINCTURE OF GINGER—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Grams Extract 100 cc.	Alcohol by Volume.	Remarks.
22428	Home Corner Grocery Co., Marion.	.8377	1.217	87.7	Low in alcohol soluble solids; high in water soluble solids.

TINCTURA IODI.

TINCTURE OF IODINE.

Of the 28 samples of tincture of iodine analyzed, 8 were legal and 20, or 71.4 per cent., illegal. Nineteen of the illegal samples were so classed because they contained less than the required amount of iodine. The lowest iodine content noted was 24.3 per cent. of the amount which should have been present. Another sample contained but 37 per cent. of the required amount. It is difficult to find the reason for the very low grade of tincture of iodine dispensed by the druggist unless we accept the reports as evidence of their carelessness and inefficiency. In view of the intelligent interest taken by druggists in the enforcement of the Food and Drug Law such explanation is not satisfactory, and the answer, if made, must come from the druggists themselves.

TINCTURE OF IODINE—LEGAL.

Laboratory No.	Manufacturer or Dealer.	Per Cent. U. S. P. Iodine.	Grams KI. Per 100 cc.	Alcohol Declared on Label.
21453	U. E. Mast, Shipshewana	100.0	4.90	
22051	Geo. W. Geddes, Butler	109.4	6.16	
22236	Jacob C. Walters, Nappanee	102.9	4.88	94.9
22238	L. L. Bryson, Nappanee	102.5	6.08	94.9
22245	Koontz Bros., Bremen	106.3	5.28	04.9
22341	H. R. Koffel, Knox	127.2	5.75	94.9
22347	L. B. Wakeman, North Judson	107.2	6.08	94.9
22601	Sent in from Nappanee	104.6	5.18	

TINCTURE OF IODINE—ILLEGAL.

Laboratory No.	Manufacturer or Dealer.	Per Cent. U. S. P. Iodine.	Grams KI. Per 100 cc.	Alcohol Declared on Label.
21579	Sent in from Indianapolis	65.6	3.53	
21870	J. J. Stoehr, Garrett	24.3	.813	Not stated.
22045	S. W. Beidler, Waterloo	73.6	.018	
22048	A. B. Darby, Waterloo	39.6	.030	Not stated.
22050	Chas. T. Phillips, Butler	99.2	4.077	
22234	C. W. Johnson, Nappanee	92.3	4.6	94.9
22246	F. D. Warner, New Carlisle	86.2	3.82	94.9
22333	T. E. Slattery, Culver	92.0	4.58	94.9
22335	N. W. Rector, Culver	113.4	5.49	Not declared.
22337	Frank A. Green, Knox	73.8	4.86	94.9
22339	Frank L. Brown, Knox	71.9	.00	94.9
22343	J. Doleaal, San Pierre	34.9	1.59	Not stated.
22345	Petterson & Watts, North Judson	85.4	4.98	94.9
22349	Howard B. McCord, Auburn	94.5	4.918	94.9
22351	W. E. Kettering, Auburn	95.4	3.914	94.9
22430	Home Drug Store, Marion	96.4	5.288	94.9
22554	Ashton Staman, Auburn	96.3	4.204	Not over 90%.
22678	Sent in from Nappanee	89.0	2.904	
22679	Sent in from Nappanee	91.0	5.452	
21462	J. A. Durand, Howe	37.0	2.67	

TINCTURA FERRI CHLORIDI.

TINCTURE OF IRON.

Three of the 4 samples of tincture of iron examined were illegal. Two of the illegal samples were so classed because the alcohol content was not declared on the label. The third sample was low both in alcohol and iron.

TINCTURE OF IRON—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Alcohol by Volume.	Per Cent. of Iron.	Per Cent. of U. S. P.	Alcohol on Label.
22432	Henry Berger, Marion	1.0212	52.1	4.65	101.6	62.0

TINCTURE OF IRON—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Alcohol by Volume.	Per Cent. of Iron.	Per Cent. of U. S. P.	Alcohol on Label.	Remarks.
21435	John Devine, Peru......	1.0385	50.2	5.05	110.4	None.	Alcohol not declared on label.
21463	J. A. Durand, Howe ...	1.0615	21.5	3.71	81.0	62.0	Low in alcohol and iron.
22350	H. B. McCord, Auburn.	1.0122	54.9	4.58	100.0	None.	Alcohol not declared on label.

SPIRITUS CAMPHORÆ.

SPIRIT OF CAMPHOR.

Of the 26 samples of spirits of camphor analyzed, 15 were legal and 11, or 42.3 per cent., illegal. Eight of the illegal samples contained less than the required amount of camphor gum. One sample contained methyl alcohol. In several cases the alcohol content was not declared.

SPIRIT OF CAMPHOR—LEGAL.

Laboratory No.	Manufacturer or Retailer.	+ Polarization.	Sp. Gr. at 20° C.	Per Cent. of U. S. P.	Per Cent. Alcohol by Volume.	Alcohol on Label.
21454	U. E. Mast, Shipshewana......	12.6	.8260	105.0	86.	87.3
21506	Sent in from Seymour.........	13.9	.8305	115.8	82.3	90.0
21867	M. Chenneour & Sons, Roanoke.	12.3	.8263	102.5	87.2	90.0
21876	Davis & Wenier, Morgantown..	15.8	.8333	131.6	85.5	86.0
22233	C. W. Johnson, Nappanee.....	14.2	.8288	118.3	84.67	86.0
22237	Jacob S. Walters, Nappanee....	19.4	.8420	161.0	79.22	86.0
22239	L. L. Bryson, Nappanee.......	16.0	.8323	133.3	83.05	86.0
22334	T. E. Slattery, Culver.........	13.3	.8343	110.8	83.64	86.0
22336	Rector Pharmacy, Culver......	15.0	.8300	125.0	84.09	86.0
22338	Frank A. Green, Knox.........	14.6	.8344	121.6	81.80	86.0
22348	L. B. Wakeman, North Judson.	12.0	.8302	100.0	85.24	86.0
22431	Home Drug Store, Marion.....	12.0	.8270	100.0	85.99	86.0
22433	Henry Berger, Marion.........	13.3	.8278	110.8	85.31	86.0
22987	Rains Drug Co., Aurora.......	13.0	.8200	108.0	88.5	90.0
23893	P. J. Griffin, Wabash..........	12.5	....	105.1	85.12	88.0

SPIRIT OF CAMPHOR—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	+ Polarization.	Sp. Gr. at 20° C.	Per Cent. of U.S.P	Per Cent. Alcohol by Vol.	Alcohol on Label.	Remarks.
21285	Schroeder Pharmacy, Shelbyville..	12.5	.8353	104.1	16.3	86.	Methyl alcohol present.
21434	John Devine, Peru..............	12.7	.8290	105.8	83.16	....	Alcohol not stated on label.
22047	A. B. Darby & Son, Waterloo.....	10.5	.8245	87.5	87.31	....	Alcohol not declared; camphor low.
22243	Fisher Bros., Bremen............	6.6	.8205	55.	90.62	86.	Low in camphor.
22342	H. R. Koffel, Knox.............	11.4	.8455	95.0	81.04	86.	Low in camphor.
22344	James Dolezal, San Pierre........	6.8	.8907	56.6	66.36	....	No alcohol on label; low in camphor.
22352	W. C. Kettering, Auburn.........	10.2	.8233	85.0	88.11	86.0	Low in camphor.
22425	Evans & Evans, Marion..........	3.4	.9210	28.3	53.81	80.	Low in alcohol and camphor.
22555	Ashton Staman, Auburn..........	10.2	.8255	85.0	87.17	86.	Low in camphor.
22979	Ed. N. Pierce & Son, Jonesboro....	13.7	.8588	114.	76.1	60.	Misbranded.
23996	Wm. Fults, Crothersville.........	7.6	....	63.3	88.98	....	Below standard.

OLEUM TEREBINTHINÆ.

OIL OF TURPENTINE.

All of the 4 samples of spirits of turpentine analyzed were legal, no mineral oil or other foreign ingredient being present.

SPIRIT OF TURPENTINE—LEGAL.

Laboratory No.	Manufacturer or Retailer	Sp. Gr. at 20° C.	Abbe at 22°.	Mineral Oil.
21429	W. T. Hanson, Peru	.8580	1.4695	Absent.
21442	John Devine, Peru	.8638	1.4690	Absent.
21507	Sent in from Seymour	.8726	1.4700	Absent.
22977	Ed. N. Pierce & Son, Jonesboro	.8630	1.4695	Absent.

SPIRITUS AETHERIS NITROSI.

SWEET SPIRITS OF NITRE.

But two samples of sweet spirits of nitre were examined, both of which were illegal. One sample contained but 1.7 per cent. of the ethyl nitrite required by the U. S. P. formula.

SWEET SPIRITS OF NITRE—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Ethyl Nitrite.	Per Cent. of U. S. P.	Remarks.
21438	John Devine, Peru	2.04	51.0	Too small for further examination.
21460	J. R. Mason, Shipshewana	0.07	1.7	Cork in very bad condition.

ESSENCE OF PEPPERMINT.

Two of the three samples of essence of peppermint analyzed contained an insufficient amount of oil of peppermint and were classed as illegal.

ESSENCE PEPPERMINT—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. Oil by Volume.	Sp. Gr. at 20° C.	Per Cent. Alcohol by Weight.	Per Cent. Alcohol on Label.	Remarks.
21464	J. B. Watson, Warsaw	11.2	.8230	81.34	85.5	

ESSENCE PEPPERMINT—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Per Cent. of Oil by Volume.	Sp. Gr. at 20° C.	Per Cent. of Alcohol by Weight.	Per Cent. of Alcohol on Label.	Remarks.
21660	Carey & Dick, Cicero	3.6	.8970	55.38	65.	Below standard in oil.
22423	Evans & Evans, Marion	4.0	.8996	61.6	....	Low in oil of peppermint.

IRON.

SYRUP IODIDE OF IRON—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Per Cent. of Ferrous Iodide.	Acidity as Hypophosphorous.	Per Cent. of Total Sugar.
20280	Chas. Leich & Co., Evansville	1.336	5.1	0.14	47.7
20382	J. L. Graham, Riley	1.334	5.1	0.08	49.4

QUININE TABLETS.

But three samples of quinine were examined, and in every case the capsules contained much more quinine sulphate than the prescription called for. Because of this fact they were classed as illegal.

QUININE TABLETS—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Labeled.	Remarks.
21210	Chas. J. Kramer, Logansport	2 grains	55% overweight.
21279	Haags Cut Rate, Indianapolis	2 grains	60% overweight.
21280	Haags Cut Rate, Indianapolis	3 grains	36% overweight.

TOILET PREPARATIONS.

Eighty-one samples of preparations used as hair tonics, skin foods, cold creams, mouth washes and lotions of varying character were analyzed. Fifty-one of the samples were classed as legal and 30 as illegal. The samples classed as legal were not so listed because they had any special merit, but solely because they did not violate the provisions of the law as regards to labeling. As a matter of fact, almost without exception, the preparations were cheap mixtures of well-known drugs sold under some fanciful name at a price far exceeding their actual value. Many of these preparations were of the class known as prescription proprietaries.

While it is not possible to condemn them because of the presence of injurious ingredients, they cannot be too strongly denounced as extravagant and unnecessary.

The 30 illegal samples were so classed either because they were misbranded or because they contained wood or methyl alcohol. Wood alcohol is a poison which on no account should be used in any preparation intended to be taken either internally or applied externally.

Further reference to the composition of face and toilet preparations will be found on page 69.

TOILET PREPARATIONS—LEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Where Collected.
22118	Hair Tonic	Harvey & Co	Sheridan.
22392	Tooth Soap	Sent in from	Rochester.
22483	Skin Food	S. S. Kresge	Indianapolis.
22484	Crème Marquise	S. S. Kresge	Indianapolis.
22493	Liquid Shampoo	S. S. Kresge	Indianapolis.
22494	Massage Cream	S. S. Kresge	Indianapolis.
22539	Hair Tonic	Knox & Co	Indianapolis.
22543	Liquid Shampoo	Knox & Co	Indianapolis.
22548	Liquid Shampoo	Knox & Co	Indianapolis.
22549	Peroxide Dentifrice	Knox & Co	Indianapolis.
22786	Complex-o-tone	Sent in from	Elkhart.
22809	Glycerine Pearl	Star Store	Indianapolis.
22825	Complexion Cream	Sent in from	South Bend.
22887	Cold Cream	Indiana Dry Goods Co	Indianapolis.
22888	Petroleum Jelly	Indiana Dry Goods Co	Indianapolis.
22932	Complexion Cream	Sent in from	Cambridge City.
22949	Cold Cream	S. H. Knox Co	Indianapolis.
22950	Cold Cream	S. S. Kresge	Indianapolis.
22968	Cold Cream	Herbert Knight	Summitville.
22969	Cold Cream	Herbert Knight	Summitville.
22970	Rose Cream	Herbert Knight	Summitville.
22973	Witch Hasel Lotion	H. D. Wood	Fairmount.
23051	Mouth Wash	T. J. Cronin	Hartford City.
23151	Toilet Cream	H. E. Frauer Co	Indianapolis.
23171	Fragrant Balm	Blue Front Drug Co	Peru.
23274	Toilet Cream	Haines & Glem	Noblesville.
23280	Rose Cream Lotion	Ed. E. Jenkins	Shelbyville.
23347	Raymond's Chap	Hargrove & Mullin	Rushville.
23433	Wrinkle Lotion	Averitt & Dirsey	Terre Haute.
23599	Del-a-tone	A. K. Drug Co	Indianapolis.
23554	Beta Quinol	A. K. Drug Co	Indianapolis.
23603	Am-O-Tone	A. K. Drug Co	Indianapolis.
23605	Citrox	A. K. Drug Co	Indianapolis.
23607	Quinzoin	A. K. Drug Co	Indianapolis.
23608	Almozoin	A. K. Drug Co	Indianapolis.
23611	Kulex Compound	A. K. Drug Co	Indianapolis.
23613	Luxor	A. K. Drug Co	Indianapolis.
23616	Clearola	A. K. Drug Co	Indianapolis.
23628	Epp-O-Tone	A. K. Drug Co	Indianapolis.
23631	Zintone	A. K. Drug Co	Indianapolis.
23634	Sulfo Solution	A. K. Drug Co	Indianapolis.
23635	Eptol	A. K. Drug Co	Indianapolis.
23636	Amarol	A. K. Drug Co	Indianapolis.
23639	Spurmox	A. K. Drug Co	Indianapolis.
23640	Canthrox	A. K. Drug Co	Indianapolis.
23641	Plain Yellow Minyol	A. K. Drug Co	Indianapolis.
23645	Ther-Ox	A. K. Drug Co	Indianapolis.
23648	May-A-Tone	A. K. Drug Co	Indianapolis.
23649	Saxolite	A. K. Drug Co	Indianapolis.
24081	Face Cream	Sent in from	Indianapolis.
22870	Cuticle Acid	Marott Dept. Store	Indianapolis.

TOILET PREPERATIONS—ILLEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Where Collected.	Remarks.
22485	Peroxide Cream	S. S. Kresge	Indianapolis	Misbranded.
22540	Florida Water	Knox & Co	Indianapolis	Misbranded.
22542	Toilet Water	Knox & Co	Indianapolis	Methyl alcohol present.
22544	Almond Cream	Knox & Co	Indianapolis	Misbranded.
22545	Toilet Water	Knox & Co	Indianapolis	Methyl alcohol present. No alcohol declared.
22547	Liquid Shampoo	Knox & Co	Indianapolis	Misbranded.
22551	Peroxide Cream	Knox & Co	Indianapolis	Misbranded.
22552	Skin Food	Knox & Co	Indianapolis	Misbranded. Methyl alcohol present.
22792	Almond Cream	S. H. Knox Co	Indianapolis	Misbranded.
22794	Cucumber Cream	S. Kresge	Indianapolis	Misbranded. Methyl alcohol present.
22795	Cucumber Cream	S. Kresge	Indianapolis	Misbranded.
22796	Almond Cream	S. Kresge	Indianapolis	Misbranded. Methyl alcohol present.
22798	Almond Cream	Haags Drug Store	Indianapolis	Misbranded.
22799	Benzoin and Almond Cream	Haags Drug Store	Indianapolis	Misbranded.
22803	Face Powder	Star Store	Indianapolis	Misbranded.
22804	Liquid Cream	Star Store	Indianapolis	Misbranded.
22806	Complexion Cream	Star Store	Indianapolis	Misbranded.
22807	Pore Cleanser	Star Store	Indianapolis	Misbranded.
22808	Peroxide Cream	Star Store	Indianapolis	Misbranded.
22844	Egg Shampoo	S. H. Knox Co	Indianapolis	Misbranded.
22868	Glycerine and Rose	Marott Dept. Store	Indianapolis	Wood alcohol present.
22869	Dermaline of Roses	Marott Dept. Store	Indianapolis	Misbranded.
22872	Beauty Powder	Marott Dept. Store	Indianapolis	Misbranded.
22889	Peroxide Cream	Indiana Dry Goods Co	Indianapolis	Misbranded.
22890	Peroxide Cream	Indiana Dry Goods Co	Indianapolis	Misbranded.
23018	Chapoline	Chas. O'Brien	Anderson	Wood alcohol present.
23045	Peach Rose Rum Balm	Shinn & Sowers	Hartford City	Misbranded.
23046	Cream of Roses	Shinn & Sowers	Hartford City	Misbranded.
23061	Chap-No-More	W. C. Kaiser	Ft. Wayne	Misbranded.
23314	Anti-Freckle Lotion	Mrs. E. B. Gustin	Logansport	Misbranded.

AQUA HAMAMELIDIS.

WITCH HAZEL.

Of the 6 samples of witch hazel examined, 3 were legal and 3 illegal. Two of the illegal samples were so classed because the alcohol content was *not declared on the label.* The third sample was not a U. S. P. extract.

WITCH HAZEL—LEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Methyl Alcohol.
22546	Knox & Co., Indianapolis	.9877	Absent.
21458	J. R. Mason, Shipshewana	.9810	Absent.
22805	Star Store, Indianapolis	.9824	Absent.

WITCH HAZEL—ILLEGAL.

Laboratory No.	Manufacturer or Retailer.	Sp. Gr. at 20° C.	Methyl Alcohol.	Remarks.
21440	John Devine, Peru	.9818	Absent.	Alcohol not declared on label.
21455	J. E. Smithimer, Shipshewana	.9874	Absent.	No alcohol declared on label.
22978	Ed. N. Pierce, Jonesboro	.9926	Absent.	Not a U. S. P. Extract.

MISCELLANEOUS DRUG ANALYSES.

Under this heading are classed some 60 articles of varying composition and source. Eight of the samples were classed as illegal.

MISCELLANEOUS DRUG ANALYSES—LEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Where Collected.
21323	Delft peanut oil	Ross Dry Goods Co	Terre Haute.
21422	Poison	Sent in from	Richmond.
21433	Gum asafoetida	W. T. Hanson	Peru.
21436	Glycerine	John Devine	Peru.
21466	Cod liver oil	J. B. Watson	Warsaw.
21467	Listerine	J. B. Watson	Warsaw.
21492	Acetic acid	Columbus Canning Co	Columbus.
21508	Castor oil	Roy L. Keach	Seymour.
21509	Glycerine	Sent in from	Seymour.
21511	Morphine sulphate tablets	Sent in from	Mt. Vernon.
21640	Horse medicine	Sent in from	Wolcottville.
21641	Glue	Sent in from	Elkhart.
21728	Tr. echinacea	Sent in from	San Pierre.
21764	Chloral hydrate	Sent in from	Medaryville.
21817	Glycerine	Geo. W. Dalton	Coal City.
21819	Citric acid	Dr. Caffey	Terre Haute.
22052	Listerine	Geo. W. Geddes	Butler.
22264	Medicine	Sent in from	Terre Haute.
22265	Medicine	Sent in from	Terre Haute.
22266	Pills	Sent in from	Terre Haute.
22298	Glycerine	J. M. Baker	W. Lafayette.
22444	Pills	Sent in from	Laporte.
22714	Flour	Sent in from	Petersburg.
22905	Laudanum	Sent in from	Noblesville.
22939	Powder	Sent in from	New Albany.
23039	Unknown powder	Sent in from	Leesburg.
23040	Sodium bromide	Sent in from	Indianapolis.
23067	Night soil ash	Sent in from	Gary.
23106	Asperin capsules	Sent in from	Athens.
23153	Unknown substance	Sent in from	Bourbon.
23217	Catarrh powder	Wm. Burget	Indianapolis.
23237	Headache powder	Sent in from	Indianapolis.
23252	Ice cream powder	Sent in from	Peru.
23253	Unknown medicine	Sent in from	Gary.
23592	Contents of chicken craw		
23721	Blood and nerve tonic	Sent in from	Peru.
23782	Epsom salts	Cooper & Son	Worthington.
23829	Cure for drunkenness	Sent in from	Muncie.
23911	Unknown medicine	Sent in from	Shelbyville.
23912	Unknown tablet	Sent in from	Indianapolis.
23922	Unknown tablet	Sent in from	Georgetown.
23923	Unknown powder	Sent in from	Indianapolis.
23924	Poisoned lemon	Sent in from	Indianapolis.
24013	Poisoned potatoes	Sent in from	Plymouth.
24043	Elixir glycerophosphate	Sent in from	Indianapolis.
24044	Elexir glycerophosphate	Sent in from	Indianapolis.
24059	Beeswax	Sent in from	Indianapolis.
24061	Unknown powder	Sent in from	Letts.
24080	Unknown crystals	Sent in from	Indianapolis.
24150	Odor-O-No	Sent in from	Indianapolis.
24176	Unknown capsules	Sent in from	Ft. Wayne.
23012	Vigor of life	Chas. O'Brien	Anderson.

MISCELLANEOUS DRUG ANALYSES—ILLEGAL.

Laboratory No.	Article.	Manufacturer or Retailer.	Where Collected.
21580	Glycerine	Sent in from	Indianapolis.
21468	Cocaine hydrochloride	Sent in from	New Albany.
21469	Cocaine hydrochloride	Sent in from	New Albany.
21779	Beeswax, yellow	Sent in from	Goshen.
22981	D. benzine	E. N. Pierce	Jonesboro.
23105	Asperin tablets	Sent in from	Athens.
23172	Fermenticide	The Artificial Ice Co	Attica.
24040	Quinine capsules	Sent in from	Indianapolis.

PATENT MEDICINES.

Under the heading "Patent Medicine Frauds" we have listed a number of preparations either for which extraordinary claims of virtue are made or which are sold at a price far in excess of their actual worth.

A study of the manufacturer's claims for his preparations will convince the most skeptical of his ignorance of the science of medicine or his desire to deceive the patient. A comparison of the price of the article with the value of the ingredients which compose it, shows the greedy desire of the compounder, under the disguise of honest medical practice, to burden the public with an excessive bill for the cheapest and most common chemicals. Epsom salts, borax, table salt, sulphur, cheap soap, baking soda, hyposulphite of soda, and aulm, compounded with small quantities of disguising ingredients, sell for fifty cents an ounce by the use of the magic of an attractive but undescriptive name reiterated by persistent advertising until it gives the reader an unwarranted sense of value which makes of him a purchaser. The manufacturers have carefully and, in most cases, successfully avoided any violation of the Food and Drug Law in that the labels of the packages carry no statement as to composition and little argument for its worth. By the use of circulars and the columns of the daily press they do, however, without difficulty, reach the notice of everyone who feels herself in need of skin food, complexion beautifier, hair removers or blood remedies. The cost of living would be decreased to a very considerable extent if the women, who are the chief purchasers of these goods, could be convinced of their worthlessness and excessive cost.

PATENT MEDICINE FRAUDS.

Laboratory No.	Article.	Manufacturer.	Manufacturer's Claim.	Composition.	Price.	Value.
23058	McLin's New Antiseptic	G. H. McLin, M. D., Huntington, Ind	"Has the most wonderful action on pneumonia, appendicitis, rheumatism."	Turpentine flavored with oil of cedar.	$0 50	$0 03
23059	Nervine	Nervine Co., Ft. Wayne, Ind	Recommended for nervousness and epilepsy.	Camphor, glycerine and valerian.	50	04
23218	Rheumatic tablets	Makewell Remedy Co., Indianapolis, Ind	For rheumatism	Salt 20% Sal ammoniac 80%	50	01
23609	Sarsene	Cooper Pharmacal Co., Chicago, Ill	A blood remedy	Extracts of senna, sarsaparilla, etc.	50	03
22516	Mayr's Stomach Remedy	Geo. H. Mayr, Chicago, Ill	"Removes gall stones without operation"	Olive oil with epsom and rochelle salts.	1 00	15
23628	Epp-O-Tone	LaCottel Mfg. Co., Chicago, Ill	"Complexion beautifier"	Epsom salts 80% Borax 20%	50	02
23631	Zintone	Cooper Pharmacal Co., Chicago, Ill	"Makes any skin bloom out in the most angelic tint and purity."	Four-fifths stearic acid and soap; one-fifth borax.	50	03
23611	Kulex Compound	Kulex Mfg. Co., Rochester, N. Y	"Skin food"	Zinc oxide 7% Bismuth sub-carbonate 5% Glycerine 10% Water 78%	50	04
23635	Eptol	Cooper Pharmacal Co., Chicago, Ill	"Whitens the skin"	Stearic acid and soap 75% Borax 17% Water 8%	50	03
23634	Sulfo-Solution	Cooper Pharmacal Co., Chicago, Ill	"Superfluous hair remover"	Sodium sulphide 9% Water 91%	1 00	01
23599	Del-a-Tone	Sheffield Pharmacal Co., Chicago, Ill	"Superfluous hair remover"	Barium sulphide 8% Barium sulphate 7% Starch 85%	1 00	01

23640	Canthrox	H. S. Peterson & Co., Chicago, Ill	"Gives to the hair that exquisite fluff and massy softness, and will insure a lovely growth."	Granulated soap	50	02
23639	Spurmax	H. S. Peterson & Co., Chicago, Ill	"No fear of tan or freckles if applied daily."	Entirely Epsom salts	50	02
23616	Clearola	G. W. Carpenter, Jaffrey, N. H	"Whitens the skin"	Entirely sulphur	50	01
23613	Luxor	H. S. Peterson & Co., Chicago, Ill	Eczema remedy	Boric acid 60% Zinc oxide 25% Water 15%	50	02
23554	Beta-Quinol	Cooper Pharmacal Co., Chicago, Ill	"Makes the best hair grower"	Quinine resorcin, menthol, beta naphthol and alcohol.	50	05
23607	Quinsoin	H. S. Peterson & Co., Chicago, Ill	"Corrects profuse dandruff, excess oiliness and other respects."	Baking soda 37% Quassia bark 60% Quinine trace	50	03
23645	Therox	American Therox Co., Windsor, Ont	Dry shampoo	Entirely borax	75	05
23641	Plain Yellow Minyol	Prescription Products Co., Dayton, Ohio	"Promotes a healthy vigorous growth of hair, cures dandruff, itching scalp and falling hair."	Salt 75% Water 22% Fat 3%	90	02
23603	Am-O-Tone	Am-O-Tone Co., Detroit, Mich	Dry shampoo	Entirely borax	75	05
23608	Almasoin	H. S. Peterson & Co., Chicago, Ill	"Fine for beautifying the arms, face and neck.	Borax 37% Magnesia 23% Gum tragacanth 40%	50	03
23648	May-O-Tone	May-O-Tone Co., Chicago, Ill	"Protection against tan, freckles and sunburn."	Borax 50% Epsom salts 50%	50	02
23605	Citrox	United Citrox Co., Detroit, Mich	Eczema remedy	Entirely sodium hyposulphite.	50	02
23649	Saxolite	Dearborn Supply Co., Chicago, Ill	"Wrinkles and sagging are corrected and the face feels so refreshed and snug-like."	Epsom salts 44% Alum 56%	65	01
23596	Vilane Powder	Blackburn Products Co., Dayton, Ohio	"Catarrh cure"	Salt 42% Baking soda 33% Borax 14% Sodium salicylate 11%	50	02
23433	Wrinkle Lotion	Sarah Thompson, Terre Haute, Ind	"Removes wrinkles"	Alum 7% Glycerine 29% Water 64%	50	03

PROSECUTIONS.

Although the inspectors of the department have worked quite as efficiently, and we believe even more effectively than ever before, their results are not indicated by an increased number of prosecutions. Indeed, the number of prosecutions filed was less than during any other year since the passage of the law. One hundred and seventy-three cases involving violation of the food-drug and sanitary food law were filed during the year. In two cases the defendant was found "not guilty." In seven cases involving the sale of milk containing visible dirt, the judge held the defendant guilty, but suspended sentence during good behavior. The amount of fines levied, with the costs assessed, totaled $3,331. In nearly every case the fine was the minimum for a first offense—ten dollars and costs. In but few instances was the maximum fine, twenty-five dollars and costs, imposed. But few cases have been appealed. One case involving the sale of milk containing visible dirt was appealed and is now before the Supreme Court, the question at issue being the right of the State to prosecute the defendant for the sale of milk containing visible dirt when the sale was made to an inspector who, as the State's agent, is empowered by law to compel the sale of samples.

One hundred and forty cases were filed for violation of the Food and Drug Law. Sixty-four of these cases were brought because of the sale of dirty milk and cream, and were filed under the amendment of the pure food law which provides that milk containing visible dirt is adulterated. Five dairymen were fined for selling milk containing added water and eleven for selling milk and cream below standard. Eight ice cream manufacturers were fined for the sale of ice cream which did not contain the required amount of butter fat or which was otherwise adulterated. Eight butchers were fined for selling hamburger steak and sausage which contained sulphites. Ten cases involved the sale of bad eggs, and four cases the sale of storage eggs not so marked. Four dealers were fined for selling watered oysters. Four druggists were prosecuted for selling tincture of iodine below standard. Two druggists plead guilty to the sale of drugs the chloroform and alcohol content of which was not stated on the label. Other violations of the Food and Drug Law involved the sale of oleomargarine for butter, candy containing sand, misbranded syrups and adulterated vinegar.

Thirty-three cases were brought because of violation of the Sanitary Food Law. Two of the cases were brought against dealers who did not properly protect their food displayed for sale, and thirty-one cases were brought because of general unsanitary conditions.

UNSANITARY CONDITIONS.

Table Showing Character of Cases.

Character of Case.	Number of Cases.
Grocery stores	12
Meat markets	3
Bakeries	3
Restaurant	1
Hotel	1
Slaughter houses	6
Canning factory	1
Unsanitary refrigerator	1
Expectorating on floor	3
Total	31

PROSECUTIONS.

Table Showing Character of Cases.

Character of Case.	Number of Cases.
Dirty milk and cream	64
Milk containing added water	5
Milk and cream below standard	11
Exposed foods	2
Maintaining unsanitary conditions	31
Ice cream below standard	6
Adulterated ice cream	2
Hamburger and sausage containing sulphites	8
Tincture of iodine below standard	4
Short weight flour	1
Excessive moisture in butter	2
Misbranding soft drinks (Concord grape soda)	2
Beer sold as dry beer	2
Bad eggs	10
Storage eggs not marked	4
Chloroform and alcohol content not stated on label	2
Adulterated vinegar	2
Selling misbranded syrup	1
Misbranded pineapple flavoring	1
Watered oysters	4
Selling oleomargarine for butter	1
Formic acid found in crushed fruits	1
Selling peanut chocolate candy containing sand	1
Misbranding temperance beer	4
Misbranding drug	1
Selling misbranded beer	1
Total	173

LIST OF PROSECUTIONS BROUGHT UNDER THE NEW PURE FOOD AND DRUG LAW FROM OCTOBER 1, 1911, TO OCTOBER 1, 1912.

COUNTY.	Laboratory No.	Name and Address of Defendant.	Why Prosecuted.	Date of Trial.	Disposition of Case.
Adams	3729-F	Baker & Hower, Decatur	Selling hamburger containing sulphites	3-12-12	Not guilty.
Bartholomew		Albert W. Rutherford, Elizabethtown	Unsanitary slaughterhouse	10-11-11	Fined $10 and costs.
Bartholomew		Howard J. Tooley, Columbus	Dirty grocery	10-11-11	Fined $10 and costs.
Boone	5928-D	Chas Smith, Lebanon	Misbranding Concord grape soda	8- 6-11	Fined $10 and costs.
Brown		Geo. McDonald, Nashville	Selling short weight flour	12- 5-11	Fined $10 and costs.
Carroll		Frank Crone, Delphi	Spitting on floor	10-26-11	Fined $10 and costs.
Clark		Charles Ruddel, Jeffersonville	Selling dirty milk	10-24-11	Fined $10 and costs.
Clark		Daniel Stemler, Jeffersonville	Selling dirty milk	10-30-11	Fined $10 and costs.
Clark		Ferd Voight, Jeffersonville	Selling dirty milk	1-31-12	Fined $10 and costs.
Clay		Robert Neal, Brazil	Unsanitary bakery	10- 2-11	Fined $10 and costs.
Clay		Wm. H. Plumb, Brazil	Unsanitary bakery	10- 2-11	Fined $10 and costs.
Clay	6344-B	Paul Lyon, Brazil	Adulterated ice cream	10-16-11	Fined $20 and costs.
Clay	6345-B	Bert Scharf, Brazil	Adulterated ice cream	10-16-11	Fined $25 and costs.
Clay		Hudson Bros., Brazil	Unsanitary slaughterhouse	10-17-11	Fined $15 and costs.
Clay		Samuel Arbuckle, Brazil	Spitting on floor, grocery	10-20-11	Fined $10 and costs.
Clay		Dressler & McCann, Bowling Green	Dirty grocery store	10-25-11	Fined $20 and costs.
Clay		Charles Taggart, Art	Dirty grocery store	10-25-11	Fined $10 and costs.
Clay		Benoi Chevalier, Brazil	Dirty grocery store	10-27-11	Fined $10 and costs.
Clay		Thomas J. Durham, Brazil	Dirty grocery store	10-27-11	Fined $10 and costs.
Clay		C. D. Lowe, Clay City	Unsanitary canning factory	9-29-11	Fined $10 and costs.
Clay	5957-D	J. Spugnardi, Brazil	Selling ice cream below standard	7-22-12	Fined $10 and costs.
Daviess		George Gilliatt, Washington	Selling dirty milk	2-29-12	Fined $10 and costs.
Dearborn		Carries Klein	Selling dirty milk	1- 4-12	Fined $10 and costs.
Dekalb		A. B. Darby, Lawrenceburg	Selling tincture of iodine below standard	1-16-12	Fined $10 and costs.
Dekalb		J. J. Stoehr, Garrett	Selling tincture of iodine below standard	2- 1-12	Fined $10 and costs.
Delaware		J. E. Heaton, Muncie	Selling milk containing visible dirt	8-27-12	Fined $10 and costs.

Elkhart	3588-F	A. D. Wells, Elkhart	Selling dirty milk	11-13-11	Fined $10 and costs.
Elkhart	3600-F	William Havens, Elkhart	Selling milk below standard (skimmed)	11-13-11	Fined $10 and costs.
Elkhart	3616-F	Paul Bonfigllo, Elkhart	Selling unprotected food stuffs	11-14-11	Fined $10 and costs.
Elkhart	3648-F	W. Hinebaugh, Goshen	Selling dirty milk	1- 2-12	Fined $10 and costs.
Elkhart	3649-F	J. C. Ganger, Goshen	Selling dirty milk	1- 2-12	Fined $10 and costs.
Elkhart	3655-F	Mrs. E. A. Rommell, Goshen	Selling dirty milk	1- 2-12	Fined $10 and costs.
Elkhart	3753-F	C. F. Moyer, Elkhart	Selling hamburger containing sulphites	2-27-12	Fined $10 and costs.
Elkhart	3826-F	D. Holderman, Elkhart	Selling milk containing visible dirt	7-24-12	Fined $10 and costs.
Elkhart	3827-F	Chapin & Ullery, Elkhart	Selling milk containing added water	7-24-12	Fined $10 and costs.
Elkhart	3830-F	J. H. Clipp, Elkhart	Selling milk containing visible dirt	7-24-12	Fined $10 and costs.
Elkhart	3831-F	J. D. Comstock, Elkhart	Selling milk containing visible dirt	7-24-12	Fined $10 and costs.
Elkhart	3834-F	S. J. Pletcher, Elkhart	Selling milk containing visible dirt	7-24-12	Fined $10 and costs.
Elkhart	3846-F	H. Staley, Goshen	Selling milk containing added water	7-25-12	Fined $10 and costs.
Elkhart	3829-F	F. H. Coffman, Elkhart	Selling milk containing visible dirt	8- 2-12	Fined $10 and costs.
Floyd		Wm. G. Seiveking, New Albany	Selling dirty milk	1-22-12	Fined $10 and costs.
Floyd		Charles E. Duncan, New Albany	Selling dirty milk	1-29-12	Fined $10 and costs.
Floyd		J. H. Harmon & Alva Wellman, New Albany.	Selling dirty milk	2- 1-12	Fined $10 and costs.
Fulton	5881-D	Quincy A. Vandegrift, Rochester	Misbranding of soft drinks (Concord grape)	5-16-12	Fined $10 and costs.
Gibson		Henry C. Redman, Princeton	Maintaining unsanitary slaughterhouse	4-10-12	Fined $10 and costs.
Grant		John Sohn, Marion	Selling cream below standard	2- 6-12	Fined $10 and costs.
Grant	5764-D	John Sohn, Marion	Selling dirty milk	2- 6-12	Fined $10 and costs.
Grant	5769-D	Renze Koldyje, Marion	Selling dirty and watered milk	2- 7-12	Fined $10 and costs.
Grant		Fritz & Son, Fairmount	Maintaining unsanitary slaughterhouse	5- 9-12	Fined $10 and costs.
Grant		John Sohn, Marion	Selling milk containing visible dirt	9-26-12	Fined $10 and costs.
Hamilton	5815-D	John C. Gasho, Noblesville	Excessive moisture in butter	3-20-12	Fined $10 and costs.
Hamilton	5816-D	Chas. Wright, Noblesville	Excessive moisture in butter	3-21-12	Fined $10 and costs.
Hamilton	5939-D	Earnest Hollenbach, Noblesville	Selling milk containing added water	7-26-12	Fined $10 and costs.
Huntington	3604-F	D. F. Rapp & Son, Huntington	Selling milk containing visible dirt	11-15-11	Fined $10 and costs.
Huntington	3609-F	John H. Bloom, Huntington	Selling milk below standard (skimmed)	11-15-11	Fined $10 and costs.
Huntington	3610-F	W. H. Meyers, Huntington	Selling milk containing visible dirt	11-15-11	Fined $10 and costs.
Huntington	3611-F	C. Vardaman, Huntington	Selling milk containing visible dirt	11-15-11	Fined $10 and costs.
Huntington	3612-F	Frunstin & Sherer, Huntington	Selling milk containing visible dirt	11-15-11	Fined $10 and costs.
Huntington	3614-F	E. L. Sheller, Huntington	Selling milk containing visible dirt	11-15-11	Fined $10 and costs.
Johnson		J. M. Scudder, Greenwood	Dirty poultry and grocery store	10-10-11	Fined $10 and costs.
Johnson		T. N. Rush, Greenwood	Unsanitary refrigerator	10-11-11	Fined $10 and costs.
Johnson		F. J. Dorsey, Edinburg	Unsanitary slaughterhouse		Fined $10 and costs.
Johnson		J. M. McLaughlin, Edinburg	Slaughtering meat under unsanitary conditions		Fined $10 and costs.
Johnson	a 2798-E	James M. Wray, Edinburg	Beer sold as dry beer	11-28-11	Fined $20 and costs.
Johnson	b 2798-E	Roscoe Wray, Edinburg	Cream of hops sold for dry beer	11-28-11	Fined $20 and costs.
Knox		E. Bierhaus & Son, Vincennes	Selling spoiled eggs	11- 1-11	Fined $10 and costs.
Knox		Joe Marsh, Vincennes	Maintaining dirty grocery store	11- 1-11	Fined $10 and costs.

LIST OF PROSECUTIONS BROUGHT UNDER THE NEW PURE FOOD AND DRUG LAW FROM OCTOBER 1, 1911, TO OCTOBER 1, 1912.

(Continued.)

County.	Laboratory No.	Name and Address of Defendant.	Why Prosecuted.	Date of Trial.	Disposition of Case.
Knox		Buck Bros., Bicknell	Maintaining dirty restaurant	1- 5-12	Fined $10 and costs.
Kosciusko	3601-F	Burr McCauley, Warsaw	Selling cream containing visible dirt	11- 7-11	Fined $10 and costs.
Lagrange	3579-F	J. A. Durand, Howe	Selling tincture of iodine below standard	11- 7-11	Fined $10 and costs.
Lake		Geo. McDonald, Nashville	Misbranding eggs	12-14-11	Fined $25 and costs.
Lake		August Sugar, Whiting	Misbranding eggs	12-14-11	Fined $25 and costs.
Lake	5688-D	John Powell, Hammond	Selling milk containing visible dirt	1-31-12	Fined $10 and costs.
Lake	5691-D	Wm. H. Norman, Hammond	Selling milk containing visible dirt	1-31-12	Fined $10 and costs.
Lake	5712-D	John P. Kreuger, Hammond	Selling milk containing visible dirt	2- 1-12	Fined $10 and costs.
Lake	3867-F	Frank Murawski, Gary	Selling milk containing visible dirt	7-30-12	Fined $10 and costs.
Lake	3868-F	Wm. & Louis Ladra, Gary	Selling milk containing visible dirt	7-30-12	Fined $10 and costs.
Lake	3870-F	Albert Schnider, Gary	Selling milk below standard in butter fat	7-30-12	Fined $10 and costs.
Lake	3873-F	H. W. Theil, Gary	Selling milk containing visible dirt	7-30-12	Fined $10 and costs.
Lake	3876-F	Edw. F. Bender, Gary	Selling milk below standard and dirty	7-31-12	Fined $10 and costs.
Lake		A. E. Kepert, Hammond	Chloroform and alcohol content not stated	8-23-12	Fined $10 and costs.
Lake	2816-C	W. T. Norris, Hammond	No statement of alcohol on label (cough syrup)	8-30-12	Fined $10 and costs.
Laporte	3735-F	John Piest, Laporte	Selling hamburger containing sulphites	2-10-12	Fined $10 and costs.
Laporte	3736-F	John Piest, Laporte	Selling sausage containing sulphites	2-26-12	Fined $10 and costs.
Laporte	3781-F	Wm. Miller, Michigan City	Selling hamburger containing sulphites	2-26-12	Fined $10 and costs.
Laporte	3783-F	L. Dingler, Michigan City	Selling hamburger containing sulphites	2-27-12	Fined $10 and costs.
Laporte	3791-F	Brinckmann & Son, Michigan City	Selling hamburger containing sulphites	2-26-12	Fined $10 and costs.
Laporte	3792-F	Joseph Tittle, Laporte	Selling hamburger containing sulphites	4-17-12	Fined $10 and costs.
Lawrence		Wm. A. Wilson, Bedford	Selling adulterated vinegar	4- 1-12	Fined $10 and costs.
Madison	5646-D	Daniel H. Wilson, Anderson	Selling milk containing visible dirt	1-20-12	Sentence suspended.
Madison	5648-D	Geo. W. Hart, Anderson	Selling milk containing visible dirt	1-20-12	Sentence suspended.
Madison	5649-D	Chas. E. Davis, Anderson	Selling milk containing visible dirt	12-26-11	Fined $10 and costs.
Madison		Cary Shepard, Anderson	Selling milk containing added water	11-17-11	Fined $10 and costs.
Madison	5650-D	Raymond Short, Anderson	Selling milk containing visible dirt	1-20-12	Sentence suspended.
Madison	5652-D	Gilbert Simpson, Anderson	Selling milk containing visible dirt	1-20-12	Sentence suspended.
Madison	5654-D	Paul De Bolt, Anderson	Selling milk containing visible dirt	1-20-12	Sentence suspended.
Madison	5655-D	Clifford Curry, Anderson	Selling milk containing visible dirt	11-23-11	Fined $10 and costs.

Madison	5656-D	Clarence Guston, Anderson	Selling milk containing visible dirt	1-20-12	Sentence suspended.
Madison	5657-D	Chas. Lyons, Anderson	Selling milk containing visible dirt	1-20-12	Sentence suspended.
Madison	5658-D	Indiana Ice & Dairy Co., Anderson	Selling milk containing visible dirt	6- 7-12	Fined $10 and costs.
Madison	5681-D	Sam Brown, Anderson	Selling adulterated vinegar	12-24-11	Fined $10 and costs.
Madison	5992-D	John Juday, Elwood	Selling milk containing visible dirt	8-26-12	Fined $10 and costs.
Madison	5996-D	Ed. Hill, Elwood	Selling milk containing added water	8-26-12	Fined $10 and costs.
Marion		Champion Syrup Refining Co., Indianapolis	Selling misbranded syrup	11-10-11	Fined $10 and costs.
Marion	2569-C	Emil Mueller, Indianapolis	Selling misbranded pineapple flavoring	11-14-11	Fined $10 and costs.
Marion	2605 C	Wm. Ball, Indianapolis	Selling milk containing visible dirt	11- 9-11	Fined $10 and costs.
Marion	2621 C	Andrew Bronwers, Indianapolis	Selling milk containing visible dirt	11- 9-11	Fined $10 and costs.
Marion	2623 C	Michael C. Shea, Indianapolis	Selling watered oysters	11-20-11	Fined $10 and costs.
Marion	2624 C	Paul Dursewicz, Indianapolis	Selling watered oysters	12-14-11	Fined $10 and costs.
Marion		James Peden, Indianapolis	Selling watered oysters	11-24-11	Fined $10 and costs.
Marion		Ella Russell, Indianapolis	Selling oleomargarine for butter	11-24-11	Fined $10 and costs.
Marion		T. Baumann, Indianapolis	Exposed foods—bakery goods	1- 2-12	Fined $10 and costs.
Marion	6402-B	Geo. A. Nicholson, Indianapolis	Selling watered oysters	11-25-11	Not guilty.
Marion		Wm. A. Walker, Indianapolis	Formic acid found in crushed fruits	3-15-12	Fined $10 and costs.
Marion	3811-D	S. S. Kresge, Indianapolis	Selling peanut chocolate candy containing sand	3-20-12	Fined $10 and costs.
Miami		Joseph Sumpter, Converse	Selling rotten eggs	10-19-11	Fined $10 and costs.
Miami		J. D. Bryan, Converse	Selling rotten eggs	10-19-11	Fined $10 and costs.
Miami	5626-D	Richard Wilson, Peru	Selling milk containing visible dirt	10-29-11	Fined $10 and costs.
Miami	5627-D	Richard Wilson, Peru	Selling milk containing visible dirt	10-29-11	Fined $10 and costs.
Monroe	4622-A	R. F. Blakely, Bloomington	Selling milk containing visible dirt	12- 8-11	Fined $10 and costs.
Monroe	4628-A	Samuel Brown, Bloomington	Selling milk containing visible dirt	12- 8-11	Fined $10 and costs.
Monroe	4629-A	John Whisnand, Bloomington	Selling milk containing visible dirt	12- 8-11	Fined $10 and costs.
Monroe	4631-A	John Burns, Bloomington	Selling milk containing visible dirt	12- 9-11	Fined $10 and costs.
Monroe		Wm. R. Smith, Bloomington	Selling milk containing visible dirt	12-13-11	Fined $10 and costs.
Monroe		Ray Rodgers, Bloomington	Selling milk containing visible dirt	12-16-11	Fined $10 and costs.
Monroe		Ben. A. Rodgers, Bloomington	Selling milk containing visible dirt	12-16-11	Fined $10 and costs.
Montgomery	5968-D	G. W. Miles, Crawfordsville	Misbranding temperance beer	8-28-12	Fined $10 and costs.
Montgomery	5973-D	W. W. Alston, Crawfordsville	Misbranding temperance beer	8-29-12	Fined $10 and costs.
Owen		Mrs. Henry Beem, Spencer	Selling bad eggs	12- 2-11	Fined $10 and costs.
Owen		Mrs. Henry Beem, Spencer	Selling bad eggs	12- 2-11	Fined $10 and costs.
Owen		Mrs. Henry Beem, Spencer	Selling bad eggs	12- 2-11	Fined $10 and costs.
Owen		B. Chaney, Coal City	Selling bad eggs	12-15-11	Fined $10 and costs.
Parke		John Glesson, Rockville	Maintaining dirty meat shop	1-11-11	Fined $10 and costs.
Porter	3516-F	Valparaiso Pure Dairy Co., Valparaiso	Selling milk containing visible dirt	10-10-11	Fined $10 and costs.
Putnam		Frank Smith, Russellville	Maintaining unclean grocery store	12- 7-11	Fined $10 and costs
Putnam		David W. Beam, Russellville	Spitting on floor	12- 7-11	Fined $10 and costs.
Putanm		John Steinback, Cloverdale	Maintaining dirty store	12-11-11	Fined $10 and costs
Putnam		Wm. A. McAninch, Putnamville	Maintaining filthy store	12-11-11	Fined $10 and costs.

LIST OF PROSECUTIONS BROUGHT UNDER THE NEW PURE FOOD AND DRUG LAW FROM OCTOBER 1, 1911, TO OCTOBER 1, 1912.

(Continued.)

COUNTY.	Laboratory No.	Name and Address of Defendant.	Why Prosecuted.	Date of Trial.	Disposition of Case.
Randolph		George Sizemore, Union City	Selling skimmed milk	9-17-12	Fined $10 and costs.
Randolph		Harry Horn, Union City	Selling ice cream below standard	9-17-12	Fined $10 and costs.
Randolph		Michael Hoover, Union City	Selling ice cream below standard	9-17-12	Fined $10 and costs.
Randolph		Aaron Bennett, Union City	Selling skimmed milk	9-17-12	Fined $10 and costs.
Randolph		David Potter, Union City	Selling milk containing visible dirt	9-17-12	Fined $10 and costs.
Saint Joseph	3636-F	Geo. Jacobs, Mishawaka	Selling milk containing visible dirt	12-30-11	Fined $10 and costs.
Saint Joseph	3639-F	M. F. Crofoot, Mishawaka	Selling milk containing visible dirt	3- 2-12	Fined $10 and costs.
Saint Joseph	3640-F	J. K. Ritter, Mishawaka	Selling milk containing visible dirt	12-30-11	Fined $10 and costs.
Saint Joseph	3641-F	B. J. Meyer, Mishawaka	Selling milk containing visible dirt	3-14-12	Fined $10 and costs.
Saint Joseph	3644-F	Peter Rossi, Mishawaka	Selling ice cream below standard	12-30-11	Fined $10 and costs.
Saint Joseph		Groff Bros., Mishawaka	Maintaining unsanitary meat market	3-25-12	Fined $10 and costs.
Scott	4552-A	V. J. Hardy, Lexington	Misbranding drug	10-25-11	Fined $10 and costs.
Starke	3707-F	James Dolezal, San Pierre	Selling tincture of iodine below standard	2- 7-12	Fined $10 and costs.
Sullivan		Bolinger & Co., Shelburn	Maintaining unsanitary grocery store	12-21-11	Fined $10 and costs.
Sullivan		Harrison Taylor, Shelburn	Maintaining dirty hotel	12-23-11	Fined $10 and costs.
Vanderburgh		John Herman, Evansville	Selling milk containing visible dirt	11-14-11	Fined $10 and costs.
Vanderburgh		Joe. M. Killian, Evansville	Selling milk containing visible dirt	11-14-11	Fined $10 and costs.
Vanderburgh		Henry Herman, Evansville	Selling ice cream below standard	11-14-11	Fined $10 and costs.
Vanderburgh		Jacob Herman, Evansville	Selling ice cream below standard	11-14-11	Fined $10 and costs.
Vanderburgh		Julius Schlumppf, Evansville	Selling ice cream below standard	11-14-11	Fined $10 and costs.
Vanderburgh		Geo. Buchenberger	Selling ice cream below standard	11-14-11	Fined $10 and costs.
Vanderburgh	2781-E	The F. W. Cook Brg. Co., Evansville	Selling misbranded beer	12-19-11	Fined $10 and costs.
Vermillion		Meyers Bros., Clinton	Maintaining dirty bakery	1- 4-12	Fined $10 and costs.
Vermillion		M. B. Scott, Clinton	Maintaining dirty grocery store	1- 4-12	Fined $10 and costs.
Vigo	2825-E	Warden Commission Co., Terre Haute	Selling storage eggs not marked	11-14-11	Fined $25 and costs.
Vigo	2827-E	H. R. Reitzel, Terre Haute	Selling storage eggs not marked	11-14-11	Fined $25 and costs.
Vigo	2828-E	Walter W. Bristow, Terre Haute	Selling bad eggs	11-15-11	Fined $10 and costs.
Vigo	2829-E	Louis J. Kenley, Terre Haute	Selling bad eggs	11-15-11	Fined $25 and costs.

Vigo		Wm. Klee, Terre Haute	Maintaining unsanitary meat market	11-24-11	Fined $10 and costs.
Vigo		Vigo Poultry & Egg Co., Terre Haute	Selling bad eggs	1- 8-12	Fined $25 and costs.
Vigo	6011-D	Henry Stoffer, Terre Haute	Selling milk containing visible dirt	9-13-12	Fined $10 and costs.
Vigo	6025-D	H. A. Salchert, Terre Haute	Selling ice cream below standard	9-25-12	Fined $10 and costs.
Vigo	6030-D	Geo. W. J. Hoffman, Terre Haute	Selling ice cream below standard	9-25-12	Fined $10 and costs.
Washington		Wm. F. Bowles, Livonia	Misbranding temperance beer	9- 2-12	Fined $10 and costs.
Washington		Ott E. Arnold, Livonia	Misbranding temperance beer	9- 2-12	Fined $10 and costs.

SANITARY INSPECTION.

The most important, and as well as the most interesting phase of modern pure food control, is the study of the sanitary conditions at the place where food is manufactured and from which it is distributed. This work will never waver, nor will the time come, as it may come in the enforcement of the Food and Drug Law, when violations of the sanitary law are so few that regulation is no longer essential. The production of the food supply involves the investment of a considerable capital. It is not longer possible for men of small capital to operate canneries or flour mills, but an investment of a few hundred dollars is all that is necessary to start a restaurant, bakeshop or grocery store. Because of this fact, men of small means and little experience will continue to embark in a business, the requirements of which are not understood, and will learn of the sanitary regulations they must meet only by actual contact with the sanitary officer. It is unfortunate that there are no restrictions which compel the man who enters the grocery trade for a livelihood to first inform himself as to the methods required in handling food. It is a deplorable fact that the baker seeking a shop is not restricted in his choice of a room, and that until his ovens are installed and his workroom busy, the sanitary law does not become effective.

As the work of the food inspector has become better known, those engaged in the food industry are coming to appreciate their responsibility to the consumer. Grocers, butchers, bakers and restaurant men alike are better informed as to the necessity for cleanliness and care. None of them, perhaps, have progressed further than the baker. The difference between sun-lit rooms and gas-lit basements, between white tile and paint and brick walls or unpainted partitions, between clean, fresh air and the dead, greasy odor of unventilated workrooms, between complete sanitary equipment and no conveniences at all—these are the marks of the baker's progress from old ways to new, from dubious conditions of cleanliness to perfect sanitation.

The baker has shown the housekeeper how with his loaf he can beat her at her own game; he is now striving to make his bakeshop rival her kitchen in neatness and freedom from dirt. And in so doing he is breaking down the one remaining barrier to as complete a passing of home baking as of home weaving or home tailoring.

Baking as an industry dates back through thousands of years; as a necessity of modern life, in this country at least, it is just now securing recognition. I do not find the explanation of its remarkable development in the past generation difficult. I find reason for it in the aroused enthusiasm of the baker to the possibilities of his business, and in his desire to make his little 10x12 corner bakeshop cater to the entire city instead of to a few neighboring customers.

Pure food legislation may have helped to break down the opposition of the consumer to baker's bread; sanitary inspection may have driven some shortsighted men to improve their methods; but the constant, eager demand for better shops, better equipment, better methods, has come from the bakers themselves.

Every convention of bakers gives a leading place in the program to the discussion of bakery sanitation. Every baker's journal appreciates the importance of letting the consumer know that the baker's goods are made by clean men, with clean equipment, in a sanitary bakeshop. The modern bakery seeks the light. The basement bakeshop is passing, and soon, with all the iniquities of its surroundings, will be abandoned.

The modern bakeshop is built for the baker and embodies in its construction the latest ideas of the sanitary officer as to light and ventilation and of the bakery expert as to the installation of labor-saving machinery.

The building from basement to roof is solidly constructed, with ceilings at least ten feet in height. Every floor is of concrete, and with the exception of the basement floor, is so made that it can be covered with hardwood floors, preferably of maple. The basement is thoroughly ventilated and well lighted. It is dry and is fitted up with platforms on which flour is piled. These platforms are made in sections and are removable, so that the basement may be kept clean and free from weevils and vermin. In the front of the first floor is the store, stockroom and office. Back of these rooms is the mixing room, and in the rear of the mixing room is the oven room. Off the baking or oven room are the cooling and loading rooms, from which the distributing end of the business starts. The complete bakery will utilize a part of this room as a wrapping room, and the far-sighted baker in building will always provide space for the installation of mechanical wrapping machines. The stables are not, as formerly, adjacent to the bakery, but are in separate buildings, and no odor from the stable ever blows across the loading room.

The second story is given over to flour bins, light storage, dressing rooms and toilets. The toilets are sanitary and complete in appointment. The dressing rooms are fitted with shower baths and lavatories, and every baker before beginning work goes from the shower bath into clean, fresh suits.

All the rooms above the basement are well lighted, by the sun by day and by electric light by night. The upper rooms are lighted by skylights, the lower floors by an abundance of side windows. The windows may be thrown open for ventilation. Through them or by the use of exhaust ventilating fans, pure air is always entering the room. The windows and doors are thoroughly screened. Flies and dust are excluded. The concrete floors and plastered walls are rat proof, and it is no longer necessary to include cats and dogs as part of the equipment of the bakery. The walls and ceilings are of hard plaster, or wood painted as often as may be necessary to keep them clean. The most progressive baker will substitute tile for plaster. The prevailing color for interior finish is white, the idea of the baker being that if any dirt goes into his shop he wants to be able to find it and not by the use of dull colors to hide its presence. All the machinery, except that which is mechanically operated and so must be fast to the floor, is set on casters to facilitate easy cleaning. The dough troughs are of metal. The proof boxes are of metal. All racks and tables are also of metal. They harbor no dirt and repel vermin.

The equipment of the bakery is almost entirely automatic in character. The hands of the baker rarely come in contact with materials, dough or finished loaf. Half-naked men toiling and sweating in dark and dirty cellars as they plunge their arms into the dough have no place in the description of a modern bakeshop. It is mixed mechanically; it is divided mechanically. The perfect weight loaves are conveyed automatically to the rounder-up. From there they go to the automatic loading device, and then to the proofer, from the proofer to the moulder, and from the moulder to the pans. This automatic machinery is labor saving, it is sanitary, it is impossible for it to convey disease. It solves the labor problem.

Sewage systems are complete. Workrooms are amply supplied with well-trapped sinks. Garbage never accumulates, but is kept in bins outside the bakeshop, which are emptied daily. The water supply is pure. If the supply at hand is not free from iron and entirely acceptable, a distillation plant is included in the equipment.

The modern bakery, mechanically operated, is a sanitary delight, and every detail which makes for cleanliness is carefully watched. The scrubbing and washing, which is as necessary a part of the day's work as taking the loaves from the oven, is not left to be done by apprentices at odd times, it is done by scrub-women who know how to use soap and water effectively, and who go about their work as their daily occupation instead of a dirty task to be hurried out of the way.

The modern baker does not carry out all these details of equipment and sanitation in the bakery and stop his oversight of his product as it leaves the bakeshop door. His delivery wagons are dust proof. His drivers are uniformed. He has abandoned the bread-box outside the grocery door and delivers his bread and pastries direct to the grocer's case or the consumer's door. He is already wrapping a part of his daily output in paper or putting it in dust proof cartons before it leaves the bakeshop, and he is looking forward to the time when by the installation of automatic machinery every article may go from his shop in an original package.

These ideals are not impractical, for they are being followed by progressive bakers in every city. They do not mean increased cost of manufacture, for goods made under these conditions sell in direct competition with the product of the poorly equipped, unsanitary shop. Such shops do meet the approval of the consumer, for almost without exception the baker who builds them finds his business grows by leaps and bounds. When the housewife knows that her baker, in his sun-lit shop with its automatic machinery, can deliver at her home clean, wholesome, palatable, nourishing bread, he will no longer be furnishing 15 or 20 per cent. of the bread consumed; he will be furnishing 50 per cent., and home baking will have become a lost art.

Five inspectors have given much of their time to sanitary work and during the year have reported 13,901 inspections. Of this number 219 places were reported as in excellent condition, 8,160 as good, 4,720 as fair, 688 poor and 114 bad. It is worthy of notice that of the total number of bad conditions reported, 49, or 43 per cent., concern dairies, although dairies constituted less than 1.4 per cent. of all the inspections made. The dairy situation is deplorable, and so far as our inspectors can determine, each year brings little or no improvement. The problem is too large to be handled by this department, provided as it is with but five inspectors, to whom is given the control of every kind of food-producing and distributing establishment, and as well the enforcement of other important laws. The two hundred thousand dairies now operated in Indiana can only be regulated by local authorities. As yet the cities and towns, except in a few unusual instances, have not given the attention they should to the regulation of the milk supply. Where city ordinances are in force, they are inadequate or unobserved. The spasmodic efforts of the local health officer result in little permanent improvement. The installation by milk distributers of modern plants where the product they handle is cleaned and pasteurized, offers a remedy for dirty milk, if the customer is not disposed to investigate the condition of the milk as it is produced at the dairy, and is content only to know that the bottle left at the kitchen door has been filtered and sterilized. The efforts of milk inspectors and of this department in the direction of an improved milk supply are hampered by the notorious fact that Indiana, almost alone among the states, has no law compelling the use of the tuberculin test, and indeed makes the application of the test to dairy cattle well night impossible. To work for clean milk in the interest of the infant is a creditable though, at present, forlorn task; but when it is realized that even if the milk be clean it may be the product of a diseased animal the task of regulating the dairy and its products becomes so stupendous as to bring discouragement, and almost to draw an acknowledgment of defeat.

When, however, we turn from the dairy to the grocery store we find cause for satisfaction.

Of the 4,680 grocery stores visited, 103 were rated as excellent, 2,941 were in good condition, 1,455 were fair, 164 were rated as poor and only 17 as bad.

Two thousand one hundred and thirty meat markets were inspected, and of this number 21 were in excellent condition, 1,288 were good, 751 were fair, 62 poor and but 8 bad.

The modern drug store stands out in the list as an example of cleanliness. Of the 2,059 places visited, 41 were rated excellent, 1,606 good, 377 fair, 33 poor and 2 bad.

Of the 1851 bakeries and confectioneries inspected, 35 were rated as in excellent condition, 1,049 were good, 667 fair, 92 poor and 8 bad.

Of the 1,655 hotels and restaurants inspected 10 were in excellent condition, 679 good, 834 fair, 124 poor and 8 bad.

Of the 49 wholesale groceries visited, 42 were in good condition. The remaining 6 were rated as fair.

Of the 74 creameries visited, 41 were in good condition, 27 were fair and 6 poor.

Seven of the 10 milk depots inspected were in good condition, while 3 were fair.

Of the 149 canning inspections made, one place was rated as excellent, 56 as good, 75 fair and 17 poor.

Of the 329 ice cream parlors visited, 4 were in excellent condition, 123 good, 170 fair and 32 poor.

The condition of slaughter houses, poultry houses, and fish markets is still unsatisfactory. Of the 174 slaughter houses inspected none were in excellent condition, 38 were reported as good, 82 fair and 36 bad.

Thirty-three of the 144 poultry houses visited were in good condition, 84 were fair, 24 poor and 3 bad.

But one of the 96 fish markets inspected was in excellent condition, 33 were good, 50 fair and 12 poor.

Inspections were also made of breweries, fruit stores, tea and coffee stores, lunch stands, oyster houses, vinegar factories, chewing gum factories, saloons, flour mills, ice and cold storage plants.

SUMMARY OF INSPECTIONS.

INSPECTIONS.	Number Inspected.	Number Excellent.	Number Good.	Number Fair.	Number Poor.	Number Bad.
Daries	185	1	6	60	69	49
Grocery stores	4,680	103	2,941	1,455	164	17
Meat markets	2,130	21	1,288	751	62	8
Drug stores	2,059	41	1,606	377	33	2
Bakeries and confectioneries	1,851	35	1,049	667	92	8
Hotels and restaurants	1,655	10	679	834	124	8
Wholesale groceries	48		42	6		
Creameries	74		41	27	6	
Milk depots	10		7	3		
Canning factories	149	1	56	75	17	
Ice cream parlors	329	4	123	170	32	
Ice cream factories	53		28	20	5	
Slaughter houses	174		38	82	36	18
Poultry houses	144		33	84	24	3
Fish markets	96	1	33	50	12	
Bottling works	41		26	12	3	
Flour mills	103	1	93	7	2	
Ice and cold storage plants	16		13	3		
Brewing companies	14		12	2		
Produce companies	6		2	4		
Fruit stores	31		13	16	2	
Wholesale fruit stores	6		4	2		
Wholesale confectioneries	2		2			
Tea and coffee stores	1		1			
Lunch stands	10	1	1	5	2	1
Packing company	1		1			
Wholesale meat markets	1		1			
Oyster houses	6		2	2	2	
Mince meat factory	1			1		
Vinegar factory	1				1	
Chewing gum factories	2		2			
Hominy factory	1		1			
Refrigerating company	1		1			
Preserving company	1		1			
Saloons	19		14	5		
Total	13,901	219	8,160	4,720	688	114

Seven hundred and sixty-three cities and towns were visited during the year. The population of these communities as determined by the census for 1910 is 1,328,038. It is probable that the total population reached by the work of the department is considerably in excess of these figures, as the rural communities very largely depend for manufactured products upon the goods sold through the cities with which, by trolley lines or modern highways, they are in constant touch. In addition, it must be remembered that the stock of the country merchant reaches him through the wholesaler, where the inspection is adequate.

CITIES AND TOWNS VISITED AND INSPECTED 1911-1912.

CITY OR TOWN.	COUNTY.	Number Times Inspected.	Population.
Adams	Decatur	1	378
Albany	Delaware	1	1,289
Albion	Noble	1	1,213
Alexandria	Madison	5	5,096
Anderson	Madison	9	22,476
Angola	Steuben	2	2,610
Arcadia	Hamilton	3	990
Argos	Marshall	1	1,088
Ashboro	Clay	1	175
Atlanta	Hamilton	3	876
Attica	Fountain	3	3,335
Auburn	Dekalb	3	3,919
Aurora	Dearborn	1	4,410
Austin	Scott	1	398
Avilla	Noble	1	579
Bainbridge	Putnam	1	449
Batesville	Ripley	1	2,151
Bedford	Lawrence	5	8,716
Benham	Ripley	1	135
Berne	Adams	1	1,316
Bicknell	Knox	2	2,794
Birdseye	Dubois	1	439
Bloomfield	Greene	1	2,069
Bloomington	Monroe	5	8,838
Bluffton	Wells	2	4,987
Boonville	Warrick	1	3,934
Borden	Clark	1	350
Boston	Wayne	1	122
Bowling Green	Clay	1	336
Brasil	Clay	6	9,340
Bremen	Marshall	1	2,008
Bristol	Elkhart	1	535
Brookville	Franklin	1	2,169
Brownstown	Jackson	2	1,492
Bunker Hill	Miami	1	668
Butler	Dekalb	1	1,818
Calvertville	Greene	1	25
Cannelton	Perry	1	2,130
Cambridge City	Wayne	3	2,237
Cammack	Delaware	1	180
Campbellsburg	Washington	2	660
Carlos	Randolph	1	150
Carpentersville	Putnam	1	175
Carlisle	Sullivan	1	850
Carmel	Hamilton	3	626
Carthage	Rush	2	873
Cates	Fountain	2	200
Centerpoint	Clay	1	414
Centerville	Wayne	2	1,019
Charlestown	Clark	1	864
Chesterton	Porter	2	1,400

CITIES AND TOWNS VISITED AND INSPECTED 1911-1912.

(Continued.)

City or Town.	County.	Number Times Inspected.	Population.
Chrisney	Spencer	3	524
Cicero	Hamilton	2	990
Clay City	Clay	3	1,213
Clinton	Vermillion	1	6,229
Cloverdale	Putnam	1	624
Coal City	Owen	2	325
Coalmont	Clay	1	300
Coal Creek	Fountain	2	200
Colfax	Clinton	1	801
Columbia City	Whitley	1	3,448
Columbus	Bartholomew	2	8,813
Connersville	Fayette	3	7,738
Converse	Miami	1	1,164
Corydon	Harrison	4	1,703
Corydon Junction	Harrison	3	25
Covington	Fountain	2	2,069
Crawfordsville	Montgomery	6	9,371
Cross Plains	Ripley	1	198
Crothersville	Jackson	3	1,038
Crown Point	Lake	2	2,526
Culver	Marshall	1	810
Dabney	Ripley	1	80
Daleville	Delaware	3	650
Danville	Hendricks	1	1,640
Darlington	Montgomery	1	708
Dayton	Tippecanoe	1	550
Decatur	Adams	5	4,471
De Gonia Springs	Warrick	2	110
Delphi	Carroll	2	2,161
Denver	Miami	1	850
Deerfield	Randolph	1	107
Dublin	Wayne	1	708
Dubois	Dubois	1	250
Duff	Dubois	1	50
Dunkirk	Jay	3	3,031
Dunreith	Henry	2	181
Dupont	Jefferson	3	300
Dyer	Lake	1	545
Eagletown	Hamilton	1	275
East Chicago	Lake	1	19,098
Eaton	Delaware	1	1,428
Eckerty	Crawford	1	250
Economy	Wayne	1	375
Edinburg	Johnson	1	2,040
Elizabethtown	Bartholomew	1	350
Elberfeld	Warrick	1	438
Elkhart	Elkhart	7	19,282
English	Crawford	3	538
Elwood	Madison	6	11,038
Evansville	Vanderburgh	6	69,647
Fairmount	Grant	4	2,506
Farmland	Randolph	3	907
Filmore	Putnam	1	200
Fincastle	Putnam	1	155
Fishers	Hamilton	2	188
Flora	Carroll	1	1,386
Florence	Switzerland	1	240
Fort Branch	Gibson	1	1,182
Fort Wayne	Allen	5	63,933
Fountain City	Wayne	1	448
Fowlerton	Grant	1	293
Frankfort	Clinton	2	8,634
Franklin	Johnson	2	4,502
French Lick	Orange	2	1,803
Galveston	Cass	1	658
Garrett	Dekalb	1	4,149
Gary	Lake	7	16,802
Gas City	Grant	4	3,224
Gaston	Delaware	1	638

CITIES AND TOWNS VISITED AND INSPECTED 1911-1912.

(Continued.)

City or Town.	County.	Number Times Inspected.	Population.
Geneva	Adams	2	1,140
Gentryville	Spencer	1	383
Goldsmith	Tipton	1	250
Goshen	Elkhart	7	8,514
Gosport	Owen	1	776
Grandview	Spencer	2	735
Grantsburg	Crawford	1	150
Greencastle	Putnam	4	3,790
Greenfield	Hancock	1	4,448
Greensburg	Decatur	3	5,420
Greensfork	Wayne	1	500
Greentown	Howard	1	1,166
Greenwood	Johnson	1	1,608
Groveland	Putnam	1	90
Hagerstown	Wayne	1	936
Hammond	Lake	6	20,925
Hanover	Jefferson	2	356
Hartford City	Blackford	3	6,187
Harmony	Clay	1	1,080
Harrison, Ohio	Dearborn	1	......
Heltonville	Lawrence	1	525
Henryville	Clark	1	480
Hillsboro	Fountain	2	528
Hobbs	Tipton	1	225
Holton	Ripley	1	350
Hope	Bartholomew	1	1,223
Huntingburg	Dubois	4	2,464
Huntington	Huntington	4	10,272
Howe	Lagrange	1	700
Indiana Harbor	Lake	2	......
Indianapolis	Marion	11	240,098
Jasonville	Greene	1	3,295
Jasper	Dubois	3	2,196
Jeffersonville	Clark	4	10,412
Jolietville	Hamilton	1	250
Jonesboro	Grant	1	1,573
Kempton	Tipton	2	600
Kendallville	Noble	2	4,981
Kennard	Henry	2	449
Keystone	Wells	1	242
Kingman	Fountain	2	535
Kirklin	Clinton	1	699
Kokomo	Howard	6	17,010
Knightstown	Henry	3	2,008
Knightsville	Clay	2	1,081
Knox	Starke	2	1,644
Kramer	Warren	1	212
Lacrosse	Laporte	1	350
Ladoga	Montgomery	1	1,148
Lakeville	St. Joseph	1	227
Lafayette	Tippecanoe	3	20,081
Lagrange	Lagrange	3	1,772
Lapel	Madison	2	1,045
Laporte	Laporte	8	10,525
Lawrenceburg	Dearborn	3	3,930
Leabonon	Boone	4	5,474
Lewisville	Henry	2	446
Lexington	Scott	1	350
Liberty	Union	1	1,338
Liberty Center	Wells	1	351
Ligonier	Noble	1	2,173
Lincoln City	Spencer	2	140
Linton	Greene	3	5,906
Lisbon	Noble	2	110
Little York	Washington	1	195
Livonia	Washington	1	197
Logansport	Cass	6	19,015
Losantville	Randolph	1	300

CITIES AND TOWNS VISITED AND INSPECTED 1911-1912.

(Continued.)

City or Town.	County.	Number Times Inspected.	Population.
Loogootee	Martin	2	2,154
Lookout	Ripley	1	40
Lynn	Randolph	1	917
Madison	Jefferson	3	6,934
Marengo	Crawford	3	686
Marion	Grant	6	19,359
Markland	Switzerland	1	200
Markle	Huntington	1	820
Martinsville	Morgan	4	4,529
Mechanicsburg	Henry	1	175
Medora	Jackson	2	675
Mefflin	Crawford	1	......
Mellott	Fountain	2	372
Michigan City	Laporte	5	19,027
Middlebury	Elkhart	1	600
Milan	Ripley	3	557
Middletown	Henry	2	1,174
Milton	Wayne	1	601
Millersburg	Elkhart	1	428
Mishawaka	St. Joseph	8	11,886
Mitchell	Lawrence	3	3,438
Modoc	Randolph	1	261
Monroe	Adams	1	334
Montgomery	Daviess	1	511
Montpelier	Blackford	2	2,786
Mount Meridian	Putnam	1	90
Mount Vernon	Posey	1	5,563
Morgantown	Morgan	2	667
Moores Hill	Dearborn	2	424
Mulberry	Clinton	1	750
Muncie	Delaware	8	2,405
Nabb	Scott	1	105
Napoleon	Ripley	1	520
Nappanee	Elkhart	1	2,260
Nashville	Brown	1	354
New Albany	Floyd	4	20,629
Newburgh	Warrick	1	1,079
New Carlisle	St. Joseph	3	612
New Castle	Henry	3	9,446
New Harmony	Posey	1	1,229
New Market	Montgomery	1	334
New Maysville	Putnam	1	102
New Point	Decatur	2	341
Newton	Fountain	2	400
Noblesville	Hamilton	7	5,073
North Judson	Starke	1	1,143
North Liberty	St. Joseph	1	681
North Manchester	Wabash	2	2,428
North Vernon	Jennings	2	2,915
Oakland City	Gibson	2	2,370
Odon	Daviess	1	1,064
Oolitic	Lawrence	1	1,079
Orleans	Orange	3	1,367
Osceola	St. Joseph	1	180
Osgood	Ripley	2	1,169
Ossian	Wells	2	661
Ottisco	Clark	2	194
Paoli	Orange	3	1,278
Parker	Randolph	3	800
Patriot	Switzerland	1	340
Pekin	Washington	1	300
Pendleton	Madison	3	1,293
Perkinsville	Madison	1	318
Peru	Miami	4	10,910
Perth	Clay	1	500
Petersburg	Pike	1	2,170
Pierceton	Kosciusko	2	817
Pierceville	Ripley	2	150
Plainville	Daviess	1	450

CITIES AND TOWNS VISITED AND INSPECTED 1911-1912.

(Continued.)

City or Town.	County.	Number Times Inspected.	Population.
Plymouth	Marshall	6	3,838
Poneto	Wells	2	308
Portland	Jay	5	5,130
Poseyville	Posey	1	780
Prairie City	Clay	1	25
Princeton	Gibson	3	6,448
Putnamville	Putnam	1	220
Raccoon	Putnam	1	100
Red Key	Jay	3	1,714
Richmond	Wayne	3	22,324
Ridgeville	Randolph	1	1,302
Rising Sun	Ohio	1	1,513
Riverside	Fountain	2	50
Roachdale	Putnam	1	849
Roanoke	Huntington	1	699
Rochester	Fulton	3	3,364
Rockport	Spencer	3	2,736
Rockville	Parke	1	1,943
Rolling Prairie	Laporte	1	446
Rossville	Clinton	1	677
Rushville	Rush	3	4,925
Russelville	Putnam	1	443
Saint Paul	Decatur	2	1,050
Salem	Washington	2	2,283
San Pierre	Starke	1	350
Saratoga	Randolph	2	410
Scircleville	Clinton	1	300
Scottsburg	Scott	3	1,669
Sellersburg	Clarke	1	676
Seelyville	Vigo	2	1,188
Seymour	Jackson	4	6,305
Sharpsville	Tipton	2	550
Shelburn	Sullivan	1	2,055
Shelbyville	Shelby	1	9,500
Sheridan	Hamilton	1	1,768
Shipshewana	Lagrange	1	600
Shirley	Hancock	3	1,519
Shoals	Martin	1	1,015
Silverwood	Fountain	2	150
Sims	Grant	1	250
South Bend	St. Joseph	5	53,684
Spencer	Owen	5	2,150
Spiceland	Henry	2	622
Sterling	Marion	1	35
Stinesville	Monroe	1	497
Stone Bluff	Fountain	2	300
Sullivan	Sullivan	6	4,115
Summitville	Madison	1	1,387
Sunman	Ripley	1	353
Swayzee	Grant	1	836
Syracuse	Kosciusko	1	1,379
Taswell	Crawford	1	157
Tell City	Perry	1	3,369
Tennyson	Warrick	1	371
Terre Haute	Vigo	7	58,157
Thornton	Boone	2	1,508
Tipton	Tipton	9	4,075
Troy	Perry	1	510
Underwood	Clark	1	225
Union City	Randolph	3	3,209
Vallonia	Jackson	1	475
Valparaiso	Porter	4	6,987
Veedersburg	Fountain	2	1,757
Versailles	Ripley	1	486
Vevay	Switzerland	1	1,256
Vienna	Scott	1	173
Vincennes	Knox	6	14,895

CITIES AND TOWNS VISITED AND INSPECTED 1811-1912.
(Continued.)

City or Town.	County.	Number Times Inspected.	Population.
Wabash	Wabash	4	8,687
Walkerton	St. Joseph	4	1,003
Wallace	Fountain	2	116
Walton	Cass	1	579
Wanatah	Laporte	1	750
Warsaw	Kosciusko	7	4,430
Washington	Daviess	5	7,854
Waterloo	Dekalb	1	1,167
Waveland	Montgomery	1	676
West Baden	Orange	2	746
Westfield	Hamilton	1	700
West Lafayette	Tippecanoe	1	3,867
West Terre Haute	Vigo	1	3,083
Westville	Laporte	1	503
Whitestown	Boone	1	700
Whiteland	Johnson	1	343
Whitewater	Wayne	1	112
Whiting	Lake	1	6,587
Williamsburg	Wayne	2	350
Williamsport	Warren	1	1,243
Winchester	Randolph	3	4,266
Wolcottville	Lagrange	1	627
Worthington	Greene	2	1,732
Yeddo	Fountain	2	225
Yorktown	Delaware	1	1,000
Zionsville	Boone	2	840
Total population of cities and towns visited			1,328,038
Different cities and towns visited			763

A COMPARATIVE STUDY OF SANITARY CONDITIONS.

A comparative study of the sanitary conditions as reported for the years 1907 to 1912, inclusive, is most interesting. With the exception of dairies, the condition of which has been elsewhere commented upon, constant progress has been made from year to year. More than twice as many grocery stores are reported in good condition in 1912 as in 1907. Nearly as much progress is recorded in the condition of meat markets, bakeries and confectioneries, and hotels and restaurants, they likewise showing a decided improvement.

COMPARATIVE STUDY OF SANITARY CONDITIONS IN 1907-1912.

Inspection.	Year.	Condition.				
		Excellent, Per Cent.	Good, Per Cent.	Fair, Per Cent.	Poor, Per Cent.	Bad, Per Cent.
Dairies	1907	5.2	16.2	43.5	19.1	15.8
	1908	1.4	14.8	44.1	26.8	12.7
	1909	1.0	20.2	39.5	30.2	8.5
	1910	0.0	13.7	42.9	24.3	19.0
	1911	0.5	9.5	23.6	35.1	31.1
	1912	.5	3.2	32.4	37.2	26.4
Grocery stores	1907	4.2	30.9	46.5	8.8	1.4
	1908	2.8	45.5	46.1	4.9	.75
	1909	4.8	53.6	35.6	5.3	1.0
	1910	3.8	60.3	30.8	4.6	.3
	1911	2.4	57.3	35.2	4.5	.3
	1912	2.2	62.8	31.0	3.5	.3
Meat markets	1907	2.8	35.0	47.3	9.9	4.9
	1908	1.8	39.8	47.4	10.1	1.8
	1909	2.2	57.7	34.0	5.4	.5
	1910	3.4	58.8	32.0	4.8	.2
	1911	1.3	52.3	34.2	5.2	.5
	1912	.9	60.4	35.3	2.4	.3
Drug stores	1907	8.1	58.4	30.7	3.2	.0
	1908	5.4	74.5	15.8	1.5	.0
	1909	3.8	72.9	18.7	3.4	.8
	1910	2.2	80.6	13.6	3.0	.4
	1911	1.5	78.4	18.3	1.4	.08
	1912	1.9	77.9	18.3	1.6	.09
Bakeries and confectioneries	1907	4.4	40.5	40.8	11.6	2.8
	1908	4.3	40.0	47.4	8.0	2.1
	1909	3.7	49.7	36.2	8.9	1.4
	1910	3.8	52.5	37.3	5.4	.8
	1911	2.6	55.3	35.6	5.9	.4
	1912	1.8	56.6	36.0	4.9	.4
Hotels and restaurants	1907	4.5	34.8	40.5	18.0	3.2
	1908	2.0	34.6	48.9	11.4	1.6
	1909	1.3	32.8	47.2	16.1	2.2
	1910	.9	37.7	52.3	8.1	.8
	1911	.7	35.1	52.0	10.6	1.5
	1912	.6	41.0	50.3	7.4	.4

CONDEMNATION REPORTS.

The method adopted for the enforcement of the sanitary law by the issuing of condemnation notices by the department has, after three years' trial, proved to be most satisfactory. The system places the responsibility for action upon the commissioner, and so removes from the inspector the burden of personally giving orders which he cannot remain to see are carried out. The official notice is without exception received as a legal order which must be obeyed. The opportunity given for appeal is but rarely made use of, and in almost every instance the improvements ordered are made before the time limit set has expired.

During the year, 573 places were condemned. Five hundred and five of these involved the maintainance of unsanitary conditions, while 304 places were improperly constructed. Eighty-eight condemnation notices were issued against dairies and 86 against restaurants. When it is noted, however, that but 185 dairies were visited as against 1,655 restaurants, their relative condition is obvious.

NOTICES OF CONDEMNATIONS.

From October 1, 1911, to October 1, 1912.

Classification.	Reasons for Condemnation.		Total Number of Places Condemned.
	Unsanitary Conditions.	Improper Construction.	
Bakeries	40	17	43
Bakery and confectioneries	3	1	3
Bakery and restaurants	5	1	5
Confectioneries	20	15	27
Canning factories	13	11	13
Creameries	4	3	5
Dairies	65	77	88
Drug stores	12	8	14
Fertilizer and grease factory	1	1	1
Fish and poultry markets	3	1	3
Fruit store	1	1	1
Groceries	62	21	65
Grocery and bakery	1	1	1
Grocery and meat markets	29	11	33
Grocery and drug store	1	....	1
Hotels	18	7	20
Hotels and restaurants	15	6	16
Ice cream parlors	4	2	4
Meat markets	59	31	68
Milk depots	4	2	4
Pickle factory	1	1	1
Poultry houses	18	10	19
Restaurants	76	43	86
Slaughterhouses	50	33	52
Totals	505	304	573

CIRCULAR LETTERS AND LETTERS OF INFORMATION.

To facilitate the enforcement of the Pure Food and Sanitary Food law, and as well to explain the provisions of the laws and assist manufacturers and dealers in complying with them, it has been the practice of the department to issue circular letters. During the year a number of these letters have been promulgated for the purpose of meeting conditions which have arisen in the enforcement of the laws and which the trade in general has not fully understood.

CIRCULAR LETTER NO. 14.

Subject: Pecans—Colored, Coated and Polished.

The attention of grocers and dealers in nuts is called to Paragraph 5 of Section 2 of the Pure Food Law, which prohibits the sale of food which is colored, coated, polished, powdered or stained in a manner whereby damage or inferiority is concealed, or whereby it is made to appear better or of greater value than it really is. The practice of coloring, coating and polishing pecans is plainly in violation of this paragraph of the Pure Food Law. Pecans of first quality are not colored, coated or polished, and the practice is only resorted to for the purpose of improving the appearance and thereby increasing the sale of imperfect, immature, undersized nuts. The practice will not be tolerated except when pecans so treated are plainly and distinctly labeled "Polished pecans," "Colored pecans," or by some other phrase which conveys to the consumer the exact facts of such treatment.

County, City and Town Health Officers, State Food Inspectors, and all other officers whose duty it is to enforce the Pure Food and Sanitary Food Laws, will be governed by this notice in regulating the sale of pecans.

H. E. BARNARD,
State Food and Drug Commissioner.

CIRCULAR LETTER NO. 15.

Subject: Rice—Coated and Polished.

The attention of grocers and dealers in rice is called to Paragraph 5 of Section 2 of the Pure Food Law, which prohibits the sale of food which is colored, coated, polished, powdered or stained in a manner whereby damage or inferiority is concealed, or whereby it is made to appear better or of greater value than it really is, and also to Paragraph 6 of Section 2, "* * * if it contains any added poisonous or other added deleterious ingredient. Rice which is coated with talc, glucose or in any other manner by which its natural appearance is changed and by which it is made to appear of better quality than it really is, or by which any added poisonous or other added deleterious ingredient is added thereto, shall not be sold, kept or offered for sale except when each package or container is plainly and distinctly labeled, 'This rice is coated with glucose and talc (or any other substance used in coating), and must be thoroughly washed before using.' "

County, City and Town Health Officers, State Food Inspectors, and all other officers whose duty it is to enforce the Pure Food and Sanitary Food Laws, will be governed by this notice in regulating the sale of rice.

H. E. BARNARD,
State Food and Drug Commissioner.

INDIANA STATE BOARD OF HEALTH, DEPARTMENT OF FOOD AND DRUGS.

Circular Letter No. 16. Subject: Care of Ice Cream Containers.

To Dealers and Venders of Ice Cream:

It has come to the notice of this department that containers used for the shipment of ice cream are left on station platforms and outside of retail establishments in a filthy and wholly unsanitary condition, and so foul that it is impossible to so clean and purify them that they may again be suitable for food containers. In order that this condition may not obtain, all dealers and venders are instructed to wash or cleanse all containers as soon as they are emptied and to protect them from the ingress of flies, dust and dirt.

County, City and Town Health Officers, State Food Inspectors, and all officers whose duty it is to enforce the Pure Food and Sanitary Food Laws, will be governed by this notice in regulating the operation of ice cream parlors, soda fountains and other places dispensing ice cream.

H. E. Barnard,
State Food and Drug Commissioner.

May 21, 1912.

INDIANA STATE BOARD OF HEALTH, DEPARTMENT OF FOOD AND DRUGS.

Circular Letter No. 17. Subject: Use of Fly Traps.

To Canners and Food Manufacturers:

The attention of canners and other food manufacturers is called to the fact that the fly nuisance, which can only in part be controlled by screens at doors and windows may be very materially abated by the use of fly traps. Experiments conducted at a model canning factory have shown the possibility of destroying all flies, and so stopping further breeding, by the use of inexpensive and simple fly traps. Their general use is advised, not as a substitute for screens, but as an efficient and practical method for destroying flies.

The traps should be placed outside the buildings wherever waste promotes breeding or furnishes food for flies, and a sufficient number should be used to attract all flies in the vicinity of the factory.

The rule requiring the screening of toilets and outhouses will not be suspended or modified by the fact that fly traps are installed, nor will the prompt disposal of waste products be less necessary.

H. E. Barnard,
State Food and Drug Commissioner.

August 1, 1912.

INDIANA STATE BOARD OF HEALTH, DEPARTMENT OF FOOD AND DRUGS.

Circular Letter No. 18. Subject: Protection of Lunch Counters.

To Saloon Keepers and Bartenders:

The attention of this department is frequently called to the fact that the display of the so-called free lunch at saloons is not in conformity with the provisions of the Sanitary Food Law, in that such food frequently is not covered, but is exposed to dust, dirt and flies, and that forks, knives, spoons, etc., are not properly cleaned after use.

The practice of providing a single fork for the use of all patrons is unclean, unsanitary, conducive to the spread of disease, and in violation of the Sanitary Food Law.

You are hereby instructed to provide suitable covers for all food stuffs placed on sale or provided for patrons, and to furnish individual forks, knives and spoons for each user.

County, City and Town Health Officers, State Food Inspectors and all officers whose duty it is to enforce the Pure Food and Sanitary Food Laws,

will be governed by this notice in regulating the sanitary operation of saloons and free lunch counters.

H. E. Barnard,
State Food and Drug Commissioner.

August 1, 1912.

Indiana State Board of Health, Department of Food and Drugs.

Circular Letter No. 19. Subject: Unclean Cars.

To Wholesale Grocers, Jobbers and Distributors:

The attention of this department is called to the fact that cars used for carrying food stuffs are frequently unclean, unsanitary and in violation of that section of the Sanitary Food Law relating to the condition of cars and vehicles used in the transportation of food.

In order that we may have more complete information as to this fact, will you cite specific instances on which you have been furnished cars unsuitable for the shipment of such goods as flour, rice, sugar, salt, etc., in bags, or when goods shipped by you have been received by the consignee in a damaged condition by reason of shipment in unclean cars.

Upon the receipt of such information this department will endeavor to secure the co-operation of transportation companies to the end that all cars used in the carriage of food stuffs be thoroughly cleaned.

H. E. Barnard,
State Food and Drug Commissioner.

CANNING FACTORY REPORT.

For years Indiana has had a reputation of being one of the leading states in the canned goods industry. This reputation has been largely achieved by reason of the volume of the pack, but during the last few years, and especially since the Pure Food Law exacted certain requirements as to sanitation and character of material employed, Indiana canned goods have earned the additional reputation of being superior in quality to those produced in other states. This recognition of superiority is due to the fact that the Indiana canner is progressive and conscientious, and recognizes the desirability of sending out only high grade products manufactured from the finest of raw material in sanitary factories, both that his products may comply with all sanitary requirements and because he appreciates the effect the widespread recognition of the fact will have in the development of his industry.

For five years the food inspectors have made a careful study of the sanitary condition of canning factories. The report for the season of 1912 shows the factories operating in the State to be in far better condition than ever before. Prior to the opening of the season thousands of square feet of concrete floors were laid; many sanitary toilets and wash rooms were installed; hundreds of rods of sewers were laid and special attention was given to the installation of basins and cesspools for the disposal of canning factory wastes. Many new Monitor washers and scalders were installed in tomato factories and replaced the antiquated types of machinery which experience has shown to be unsuitable for its purpose. In the endeavor to control the fly nuisance hundreds of large fly traps were employed with excellent results. In addition to these readily noted improvements the canners have surrounded their industry with a more complete sanitary and scientific control than ever before. They have come to realize that canning factory operations are not readily carried on by ''rule of thumb'' foremen, and that the best results can only be obtained when they have an intelligent knowledge of what they accomplish by the processes under their control.

During the year, 125 canning factories were operated. Of this number 4 were scored as in excellent condition, 44 were in good condition, 67 fair and 10 poor. Fifty-two of these factories packed tomatoes only, 73 packed a variety of goods, 65 factories made tomato pulp either from the skins and cores or from the whole tomato.

One hundred and eleven of the factories were operated by Indiana corporations. Fourteen factories were run by corporations doing business in other states but coming to Indiana to pack certain of their products because of the superiority of Indiana raw material.

But six of the factories used benzoate of soda. Four of these 6 users were graded as in fair condition. All goods containing benzoate of soda were shipped into other states. When but six of the 65 makers of pulp, less than ten per cent. of the number operating, use benzoate of soda, it must be evident that the use of this preservative is wholly unnecessary.

SUMMARY OF CANNING FACTORY CONDITIONS FOR 1912.

	Total Number.	Excellent.	Good.	Fair.	Poor.	Remarks.
Factories operating	125	4	44	67	10	Three farm plants.
Tomatoes only	52	3	7	36	6	The ''excellents'' were catsupe plants.
General packers	73	1	37	31	4	
Pulp makers	65	3	30	28	4	Four graded "fair" use benzoate of soda.
Indiana corporations	111	3	36	64	8	
Foreign corporations	14	1	7	4	2	

CANNING FACTORIES.

Anderson:

Anderson Canning Company.—This company packed corn, only, this year. The building is of frame construction, in good condition. The floors are concrete and boards and are in good condition and kept clean. The city sewer is employed for disposal of refuse. Outside toilets are unsatisfactory and are not well kept. Ample water pressure is available for the factory and the place is cleansed daily.

Arcadia:

Arcadia Canning Company.—This factory packs tomatoes and pumpkins but does not make tomato pulp. The building is frame, in fair condition. The floors are board and are only fair. Wash rooms and toilets are newly built and are satisfactory. The floors and machinery are cleaned daily and the refuse is carried away by sewer. This company is independent and apparently successfully operated.

Atlanta:

Scott Brothers.—This company operates in a good frame building with cement floors and the general inside conditions are good. No wash rooms are provided and the outside toilets are not kept in the best condition. Tomatoes, only, are packed here and no pulp is made. The refuse is discharged through a sewer. Fair water pressure is obtainable and floors are well cleaned daily.

Aurora:

H. D. Tuffts.—This is a farm factory which does quite a business packing fruits and vegetables and operates in a frame building with concrete floors. It has ample water pressure and is fairly well conducted. The refuse is disposed of by sewer and haul and the operatives are clean and careful.

Austin:

The Star Canning Company.—This company, located at the south end of the village of Austin, does business in a frame building in a fair condition, except as to the floors which are of boards, and are unsatisfactory. The toilets are in the yard and are not well kept. Facilities for washing are provided though no room is set apart for that purpose. The refuse is disposed of by sewer and wagon and the premises are in fair condition. This company does a general packing business but did not make pulp in 1912.

Austin Canning Company.—This company commenced business in a small way a few years ago and has grown to large proportions. Improvements have been gradual until the past year when a decided step forward, in the way of betterment, was made. Large brick additions, concrete floors everywhere, new power house, enlarged pumps, improved machinery for washing and scalding, new sanitary toilets and rest rooms are some of the commendable improvements. A general packing business is done, pulp being kept in tins without preservatives. The refuse is disposed of by sewer and haul. The company operates a good plant throughout the year, is independent and is successfully operated.

Birds Eye:

Birds Eye Canning Company.—This company packs tomatoes, only. (and makes no pulp) in a frame building which is becoming dilapidated. The floors are of boards and are not impervious. The outside toilets are only fair and poor facilities for washing are provided. The refuse was dumped in the yard and conditions about the place were generally unsatisfactory. The floors are not cleaned daily, and could not be cleaned thoroughly because of their condition. The place was condemned, and can not operate longer unless extensive improvements are made and a management provided which realizes the necessity of handling food stuffs in a sanitary manner.

Brazil:

Mullen-Blackledge-Nellis Company.—This is a new plant, built in 1912 and deserves more mention than space permits. The building is of brick, the floors in operating rooms of concrete, the toilets are inside and sanitary, rest and dressing rooms are provided, water and light are abundant, the equipment is of the best—in short, is an ideal plant for the manufacture of catsup. Pulp and tomato catsup, only, are made, and sound whole tomatoes are used. A sewer carries away the refuse.

Brookstown:

French Brothers.—This factory cans corn and tomatoes but does not make pulp. The building is frame, in good condition. The floors are wood but in good condition. The toilets are outside and fair. The solid refuse matter is hauled away whereas the liquid refuse is turned into an open ditch. The factory is apparently successfully operated.

Boonville:

Thomas Nugent, Packer.—The Boonville factory, after lying dormant for three years, was taken over by Thomas Nugent, who renovated the plant this year for the tomato pack. The frame building is in fair condition, as are the wood floors. Toilets, outside, are good and facilities for washing are provided. The solid refuse is hauled away in barrels, the liquid is turned into the sewer. Ample water pressure is available and the floors and machinery are thoroughly cleaned daily.

Brownstown:

Ladoga Canning Company.—This plant is operated as a branch station and is housed in a frame building in fair condition. The floors are of wood, likewise in fair condition. The tile drain carries away the refuse. The toilets are in the yard and are also fair. Tomatoes are packed. Pulp is made from whole sound fruit, refuse, skins and cores and packed in tin. No preservative is used.

Bunker Hill:

Bunker Hill Canning Company.—This company packs tomatoes and pumpkins and makes pulp. The pulp is made from whole sound stock and preserved in tin. Toilets are in the yard and are kept fairly clean. This company is independent and is apparently successfully operated.

Cambridge City:

H. A. Whitley & Son.—This firm packed tomatoes, only, this year and made no pulp. The building is frame, in fair condition. The floor is made of wide boards but is apparently impervious to water. Outside toilets were found in poor condition. Wash rooms are provided but they are located inconveniently for the workmen. Solid waste is hauled away daily and other waste is carried away by good sewerage.

Campbellsburg:

The factory at this place after being idle for three years was this year operated as a pulping station by Hirsch Brothers, of Louisville, Ky. The place was thoroughly renovated and the product handled in a sanitary manner. The building and floors are wood and in fair condition. The toilets are outside and were kept fairly clean. Solids were hauled away daily in tight barrels and the liquid waste carried away in tiles.

Carmel:

Carmel Canning Company.—This is one of the forty-nine plants in Indiana that pack tomatoes only. No pulp is made. The frame building is in fair condition and the concrete floor is a good one. The outside toilet is fair and the refuse is hauled away. This is a hand pack plant, but the only facilities provided for washing the hands was the scalding tank.

Carmack:

S. H. Dragoo Canning Company.—This company operates in a fair frame building with a good concrete floor. The toilets are in the yard and are fairly well kept. Wash rooms are provided but are not conveniently located for the operatives. The sewage is hauled away. Tomato pack is the output.

Carthage:

Danna Canning Company.—Tomato and tomato pulp is the product prepared by this company. The work is done in a fair frame building with fair plank floors. The toilets are outside, unscreened and in poor condition. Refuse is dumped too near the factory.

Charlestown:

Ohio Valley Canning Company.—This company packs tomatoes, only, and makes no pulp, in a frame building which is becoming somewhat dilapidated though the board floor is in fair condition. The drainage and the disposal of the refuse, however, is bad and must be corrected, along with some other things or the company will not be permitted to operate next year.

Chrisney:

Chrisney Canning Company.—The output at this plant is small but is handled in a fairly satisfactory manner. The building is frame, the floors are board and concrete and ample water pressure is provided for cleansing. The refuse is sewered and hauled away. Outside toilets are in fair condition.

Clarks Hill:

Franklin McVeagh & Company.—After being idle for some time, this plant was operated this year by the Chicago firm. Peas, corn, tomatoes and pulp were packed in a fairly satisfactory manner. The building is a fair frame structure. The floors are concrete and boards, the water pressure is ample and the outside toilets were reasonably well kept.

Columbus:

Columbus Canning Company.—The building here is frame, in fair condition, the floors are board, likewise fair, the toilets are in the yard and kept reasonably clean. The refuse is carried away by drain tile and the premises are in good condition generally. Tomatoes, corn and small vegetables are packed and pulp is made and kept in cans.

Corydon:

Hirsch Brothers.—This is one of the three plants in Indiana operated by Hirsch Brothers, of Louisville, Kentucky, for the manufacture of tomato pulp. While the building and floors are of wood, an ample water pressure is maintained and the place is kept washed clean.

Crothersville:

Crothersville Packing Company.—This company operates in a frame building which has seen little improvement for several years and as a consequence is becoming somewhat dilapidated. A redeeming feature here, however, is that an ample water pressure is maintained and a good private sewer system is operated which helps to overcome other conditions which are not so desirable. Tomatoes, only, were packed this year.

Rider Brothers Packing Company.—This firm is building a new up-to-date factory to take the place of the one which has been operated for several years. The new place gives promise of being in every way a satisfactory plant.

Daleville:

Daleville Canning Company.—This company has a new plant, built of concrete blocks, concrete floors, inside sanitary toilets, wash and rest rooms and is conducted in a very satisfactory manner. This is too good a plant not to be operated the year around. Tomates, only, are now packed.

Dunreith:

Farmer's Canning Company.—This company packs tomatoes only. The building is frame, in good condition, and there is a good new concrete floor. New inside toilets have also been built. The refuse is hauled by wagon and sewer.

Deputy:

Deputy Canning Company.—This company operates in a frame building with board floors, all in fair condition. The refuse is turned loose into a solid rock-bottom branch which runs directly under the building. Tomato and tomato pulp were packed.

Duff:

Duff Canning Company.—This company packs tomatoes only. No pulp was made this year. The building is a frame in fair condition with tight board floors kept well cleaned. The toilets are outside, well screened and in good condition.

Delphi:

Great Western Canning Company.—Corn, tomatoes, kraut, hominy, beans, etc., are packed in a stone building with concrete floors, all in good condition. The toilets are good and wash rooms are provided. The refuse is disposed of by way of the sewer. No tomato pulp is made.

Dubois:

Dubois Canning Company.—This factory did not operate this year because of failure in tomato crop.

Elwood:

Frazier Packing Company.—Tomato catsup is the product turned out by this company. The business is conducted in a good frame building with fair board floors. The toilets are outside and in fair condition. Wash and rest rooms are provided. The sewer carries away the refuse.

Irwin & Turner.—Tomatoes only, building frame, fair. Floors board, fair. Toilets, outside, fair. Refuse, solids hauled, liquid turned into open ditch. No pulp made. Organization fair.

H. Ferguson Packing Company.—According to the report of the inspector this company is about on a par with the company reported next above except that the building used by the Ferguson Company is brick and frame.

Elnora:

Elnora Packing Company.—Beans and tomatoes constitute the pack of this concern this year. The business is conducted in a fair frame building. The operating floors are concrete and are good. The remaining floors are wood and in satisfactory condition. The company is handicapped because of its inability to handle well the refuse. The country is too flat to sewer it away. A large concrete tank has been constructed into which all refuse is carried. From here it is hauled out and spread on the farm land. The means employed are fairly satisfactory.

Edinburg:

Naomi Canning Company.—The only output of this factory this year was corn. The main building is of concrete, with concrete floors, in good condition. The ware rooms are frame with board floors and is suitable for the purpose intended. Facilities for washing are provided. The toilets are in the yard and are fair. The refuse is disposed of by way of drain tile.

English:

English Canning Company.—This company does business in a fair frame building with a fair board floor. The sewage is carried away by a large drain tile. The toilets are outside and fairly well kept. Tomatoes and tomato pulp are packed.

Evansville:

Indiana Canning Company.—This is one of a dozen good new plants built in Indiana in 1912—and it is a very good one. It is built of steel, concrete and glass, with concrete floors and has connection with the city sewer system. The toilets are inside the building and are sanitary. Dressing rooms, wash rooms and rest rooms are provided. The equipment is good throughout and great care is taken in every way. A general packing business is done.

Fairmount:

T. A. Snider Preserve Company.—This is one of a string of places operated by the Snider people of Cincinnati, Ohio, for the manufacture of tomato pulp and chili sauce. The business is housed in a good brick building, with a good concrete floor and sanitary inside toilets. Wash and dressing rooms are provided. The refuse is hauled away in tight tanks. All the output is packed in tin.

Frankfort:

New Federal Canning Company.—This factory, after having been idle for some years was operated this year by the above named company. From the present condition of the plant, it should have remained idle indefinitely. The frame building is dilapidated, the board floors are poor and the refuse is thrown on the ground just outside of the building. The toilets are in the yard and are fairly well kept. Corn and tomatoes are packed.

Huntingburg:

Huntingburg Canning Company.—Small fruit and tomatoes are packed by this company in a good frame building, with good board floors, outside toilets screened and well cared for. The refuse is disposed of by means of a private sewer and haul. The place is well kept through and the product is carefully handled.

Hammond:

Reid-Murdock Company.—This plant is well conducted by a Chicago firm and turns out a great variety of high class food stuffs. The building is a good brick structure, the floors are concrete, inside toilets are kept in a sanitary condition, wash rooms and dressing rooms are provided and the refuse is turned into the city sewer.

Harrison:

Snider Preserving Company.—This factory is operated by the Cincinnati concern as a pulping station. The crop was so light this year that very little pulp was made here, however, the whole tomatoes being shipped to the parent plant. The building is a frame in fair condition and the floor is only fair.

Henryville:

Jeffersonville Canning Company.—This is a branch plant of the above named company where tomatoes are packed and tomato pulp made of small tomatoes, skins and cores. The building, floors and toilets, all wood, are in fair condition and are tolerably well kept. The liquid refuse is turned into a private sewer and the solid matter is hauled away daily.

Gaston:

Gaston Canning Company.—Peas, tomatoes and tomato pulp are packed by this company. The work is done in a good frame building with a concrete floor. The toilets are outside and are kept in fair condition.

Greenwood:

Polk & Company.—This well known company has a good brick building, concrete floors, wash rooms and dressing rooms and inside toilets, all well kept. Lunch rooms are provided and every equipment and facility provided to produce an excellent product. The factory operates the year through the principal products being peas, corn, tomatoes, sauerkraut, baked beans and hominy.

Indianapolis:

Columbia Conserve Company.—Tomatoes and small fruits are packed by this company. Tomato pulp is made from the small tomatoes. The building is a good brick and the floors are concrete. The toilets are inside and are well kept. The city sewer takes care of the refuse. This is a good plant.

J. H. Oust.—This plant packs small vegetables and is rated as fair by the inspector. The building is frame and the floors are boards. The city sewer is employed to carry away the refuse. Inside toilets are provided as are also dressing rooms.

Van Camp Packing Company.—All kinds of fruits, vegetables and condiments are packed by this company. The brick building is in good condition. The floors are of concrete. Wash and dressing rooms are provided and the place is very well kept. The city sewer is employed to carry away the refuse.

W. D. Huffman & Company.—This firm packs pickles, etc., in a brick and frame building which is in fair condition. Boards and concrete are each employed in the construction of the floors. The toilets are outside and are fair. Wash rooms are provided. This plant has a rating of "fair."

Schnull & Company.—This company does a general packing business and operates in a new brick building with concrete floors, with inside toilets, wash rooms and dressing rooms. The city sewer handles the refuse. This plant is successfully operated.

Hagelskamp & Haverskamp Canning Factory.—This company packs small vegetables in an old frame building wholly unsuited for the use to which it is put. New concrete floors have been put down and satisfactory toilets have been built but the plant is operated in a very unsanitary manner. The refuse is carried by drain to the city sewer. Pulp is packed in barrels.

Jasper:

Jasper Canning Company.—This company is in the hands of a receiver and was not operated this year.

Jeffersonville:

Jeffersonville Canning Company.—Kraut, hominy and pork and beans are the pack of this company. The business is successfully operated in a good frame building; floors are of concrete and boards and are in good condition. Direct connection is made with the city sewer. Toilets and washing facilities are in good condition. Ample water pressure is maintained and the place is thoroughly cleaned daily.

Kennard:

Kennard Canning Company.—This company packs tomatoes only. The building is of frame and in good condition and new concrete floors have been laid since the last report. Good outside toilets are provided and well kept. The refuse is hauled away one-fourth mile and dumped. Wash rooms are provided. The plant shows a decided improvement over last year.

Kokomo:

Sailor Packing Company.—The output of this company is corn, peas and tomatoes. The building is brick and frame and is reported in good condition. The floors are of concrete and are kept clean. Outside toilets are in good condition. Refuse is handled by sewer and haul.

Kokomo Canning Company.—This company packs peas, corn, tomatoes and pulp. Barrels are used in part for the pulp. The building is constructed of brick and wood and is in good condition. The floors are concrete and boards and are in good condition and kept well cleaned. Inside toilets are in good condition. Troughs take the place of wash rooms and pulp is made from skins and cores. Refuse is carried away by the sewer.

Knightstown:

Knightstown Canning Company.—Tomatoes and pumpkins are packed at this factory. It is one of three factories in the State which pack tomato pulp in barrels and one of the six which uses benzoate of soda, about four ounces to the barrel being used. The building is of frame construction, in fair condition. The floors are board and are water proof. The toilets are outside and were found in fair condition. The solid refuse is hauled away and other waste is turned into the sewer. Wash rooms are provided.

Ladoga:

Ladoga Canning Company.—This company does business in a good building, except the floors, which are plank and need repairing. Toilets are outside and are kept in fair condition. A tank is made to serve the purpose of a lavatory. A sewer takes care of the waste. Corn and tomatoes are packed and pulp is made from skins and cores and packed in five gallon cans.

Lapel:

Lapel Canning Company.—This company operates in a frame building in fair condition. The floors are of concrete. Wash rooms are provided and outside toilets are kept in fair condition. The refuse is cared for by means of a sewer and wagon. Tomatoes only, are packed.

Lebanon:

Columbia Conserve Company.—This plant is operated as a branch factory, headquarters being at Indianapolis. Catsup and soups are made here. The building is of frame in good condition and the floors are boards, in fair condition. Inside toilets are satisfactory and the waste is cared for by the sewer.

Lewisville:

Lewisville Canning Company.—The products of this factory are tomatoes and tomato pulp. The latter is made from the trimmings. The building is a fair frame with a good board floor. The toilets are outside and unscreened. Wash rooms are provided. Solid waste matter is hauled away and the other waste is sewered away. The drainage at this plant is unsatisfactory.

Lexington:

Lexington Canning Company.—This company packs tomatoes and makes tomato pulp from the small sound fruit. The pulp is packed in barrels with five pounds of salt. The building is a fair frame structure, with good board floors. The outside toilets are well kept. The refuse is handled here in an ingenious manner. The factory is located in a small village and has no sewer system. The refuse is carried some distance through a line of large tile to a double settling basin built of concrete. Here it is occasionally treated with a disinfectant and in time of freshet is turned out into a small stream and carried away. No complaints have been made from the citizens along the stream and the conditions around the factory are entirely satisfactory in that respect.

Little York:

Garriott & Gamble.—This is a small factory, packing tomatoes. The plant is so crude and the work is done under so many difficulties that it can not be well done. The factory will not be permitted to run again unless radical improvements shall have been made.

Little York Canning Company.—The building at this place is of frame, in fair condition. The floors are boards, likewise in fair condition. The toilets are outside and screened and kept in fair condition. Facilities are provided for washing. The refuse is hauled and sewered away, but is not done in a very satisfactory way. Neither are the floors kept in a proper manner.

Lisbon:

Lisbon Pickle Works.—As the name indicates, this plant packs pickles. No other product is handled. The building is poor and unsuited, in its present condition, to its purpose. The floor is good, however, being of concrete. Outside toilets are fairly clean and wash rooms are provided. The sewage is disposed of through a drain.

Noble County Canning Company.—This company has a good frame building with fair wood floors. The toilets are in the yard and are fairly well kept. Wash rooms are provided. The refuse is turned into a drain. Tomatoes and corn are packed, and pulp is made from whole sound fruit.

Loogootee:

Loogootee Canning Company.—This plant, after being idle for two seasons was operated this year as a branch to a Kokomo company. Nothing was packed save tomatoes. The frame building is dilapidated, the wood floors are poor and the drainage is bad. This place was condemned and can not again be used for manufacturing food products until radical improvements are made.

Memphis:

Hirsch Brothers.—After having been condemned five years ago, and standing idle all that time, the plant at this place was taken over this year by the above named firm of Louisville, Ky. Quite a sum of money was expended on equipping the place with new machinery, water, etc., but no improvements worth mentioning had been made in the sanitary condition of the plant. At the beginning of the packing season the Inspector visited the plant and stopped packing until new floors, satisfactory drainage and other improvement were made. The work was done and the pack was then continued under fairly satisfactory conditions.

Marysville:

Southern Indiana Canning Company.—This is a farmer's co-operative factory, built new this year. But construction work commenced too late and the packing season was on before the building was completed. A part of the work was very well done but the factory was operated under unsatisfactory conditions, as to drainage and the proper handling of pulp. The building is of frame and the operating room has a concrete floor. Outside toilets are fairly well kept. Tomatoes and tomato pulp constitute the pack. The pulp is packed in barrels, with twenty-five pounds of salt.

Markland:

Markland Canning Company.—This Ohio River factory packs tomatoes only. The building is poor and is frame. The board floors are likewise poor. Toilets in the yard are in fair condition and facilities for washing are provided. This company must make decided improvements to be in reasonable compliance with the law.

Madison:

Snider Catsup Company.—This is a branch plant of the T. A. Snider Company, of Cincinnati, Ohio, and makes tomato catsup, only, packing the same in bottles ready for the trade. The building is of frame and in good condition. The floors are boards and are also good. Inside toilets are well kept and dressing rooms are provided. The refuse is sewered into the Ohio River. The plant does a very large business and is well conducted.

Marengo:

Marengo Canning Company.—Tomatoes packed. No other product. Frame building fair. Board floors fair. Outside toilets fair. Facilities for washing provided. A private sewer handles the refuse.

Marion:

T. A. Snider Preserve Company.—This is another one of a string of factories operated in this State by the Cincinnati company. Tomato catsup, exclusively, is packed here. The building is of brick in good condition. The floors in operating rooms are of concrete. Wash rooms and dressing rooms and outside toilets are provided and kept in fair condition. A good sewer system is in use.

Muncie:

Sanitary Packing Company.—The building in use here is a frame with iron sidings. The floors are concrete. The water pressure is ample and the place is thoroughly cleaned daily. Good wash rooms and inside toilets are provided. The refuse is sewered away.

Tuhey Canning Company.—A frame building, in fair condition is made use of by this company for the packing of peas, tomatoes and tomato pulp. There is a concrete floor. Wash and dressing rooms are provided and kept in good condition. Outside toilets are not so well kept. A good sewer system handles the waste.

Butterfield Canning Company.—The building here is constructed of concrete blocks and has concrete floors, all in good condition. Good wash and dressing rooms are provided and outside toilets are well kept. Solid refuse is hauled away, the remainder being turned into the sewer. Pulp is packed in tin.

Medora:

Medora Canning Company.—Unlike most farmer's co-operative canning companies, this one sought for the best building and equipment—and found it. They organized and built this year. The building is of frame in the best condition, concrete is employed in the floors and wherever possible, inside sanitary toilets are provided, as are, also, washing and dressing rooms. Private water system and sewer system constructed. The conditions throughout the plant and around the premises are very satisfactory.

Nabbs:

Indiana Tomato Seed Company.—This factory is one of a string operated by a New York firm, operating plants in Michigan, Florida and New York. Tomato catsup is packed in barrels, with one-fifth of one per cent. of benzoate of soda, and shipped East where the catsup is bottled for the trade. Saving tomato seed seems to be the main business, as one would judge from the name, with catsup a by-product. The plant is a new one, built this year, of frame sides and covered with iron. The floors are concrete. The concern had all kinds of troubles. The building was wrecked by a cyclone just as it was completed and the plant started. It was rebuilt and then water supply failed. A small pack was the result.

Newburg:

Newburg Canning Company.—The building occupied by this company is a frame and is in fair condition. The floors are built of tight boards. The toilets are outside, screened, and in fair condition. The refuse is dumped into the Ohio River. This factory is in fair condition except as to drainage, which must be bettered.

North Vernon:

T. A. Snider Preserving Company.—This is one of five branch factories operated in this State by this Cincinnati firm. The main building is a frame, old and in poor condition. A new cooking and processing room has been built this year which is of steel and concrete and is very satisfactory. But the department for washing, scalding and peeling is very unsatisfactory, the floors being open, and the drainage therefrom bad. These defects must be corrected. Outside toilets are in fair condition. The plant had been idle for two years.

Noblesville:

Noblesville Canning Company.—This company operates in a fair frame building. Concrete floors are in use except in ware rooms. Outside toilets are in fair condition and wash rooms are provided. Solid waste is hauled away the remaining refuse being turned into the sewer. Corn, tomatoes and peas are packed.

North Terre Haute:

North Terre Haute Canning Company.—This company is equipped to do a general line of packing but this year tomatoes, only, were packed. The building is of frame construction in good condition, with good concrete floors. Wash rooms are not provided and outside toilets are in fair condition. The wagon and the sewer are each requisitioned to handle the refuse.

North Madison:

North Madison Canning Company.—This is a farm-hand-pack concern with facilities somewhat crude but the place is kept in good sanitary condition and a very popular pack of tomatoes is turned out there.

New Castle:

The Scioto Canning Company.—Tomatoes only are packed here. This company has a good frame building with a good plank floor. Fair outside toilets and satisfactory wash and dressing rooms. The solid refuse is hauled away and the liquid waste is turned into the sewer. This factory has been idle for some time until this year.

Otisco:

Otisco Canning Company.—This is a new plant—a farmer's co-operative plant. They commenced to build too late and were not prepared when the tomato crop was ripe for the pack. The concrete floors were not all in, the frame building itself was in an unfinished state, the toilets were makeshifts and the drainage was unsatisfactory. But in spite of all these handicaps a pretty fair pack was made and by next season a satisfactory establishment will be in operation.

Paoli:

H. P. Williams Fruit Products Company.—This is one of the new plants built this year. All the latest ideas and best equipments have been incorporated in this institution which is designed to pack all kinds of fruits and vegetables but which this season packed tomato pulp. The building is of brick and concrete, with concrete floors. The machines are operated by motors and the plant has its own lighting system. An adequate description of the place is impossible here. As an illustration of the care taken by the company, however, it might be said that two competent chemists are employed at the plant all the time, taking samples of every batch that is turned out.

Patriot:

Patriot Canning Company.--This company has a good brick building with fair board floors, good private sewer system and fair outside toilets. Ample water pressure is provided and the plant is well kept. This company had a peculiar experience this year. After operating six days they were compelled to close the plant because the pack was all blowing up. It developed that the juices in the whole tomatoes had soured, though the skin was intact and unharmed and, apparently, in prime condition. The result was that all the pack, together with the contracted acreage (which, fortunately for the company, was not more than one-fourth of a crop) was dumped into the Ohio River.

Pekin:

Pekin Canning Company.—This company operates in a fair frame building with a fair board floor. The outside toilets are poor and the drainage is not good. Facilities for washing are provided and an ample water pressure is available. The plant is well cleaned daily. Tomatoes, only, are packed.

Peru:

Peru Canning Company.—Corn, peas, tomatoes and pulp are packed by this company. The work is done in a good frame building, with a good plank floor. Outside toilets are in fair condition and wash rooms and dressing rooms are provided. The refuse is disposed of by way of the sewer. The pulp is packed in barrels with six per cent. of benzoate of soda and is shipped to Toledo, Ohio.

Petersburg:

Petersburg Sanitary Canning Company.—This is one of the new plants installed this year and is operated as a branch plant to the Van Camp Packing Company, of Indianapolis. The building is of frame in good condition. The floors are boards, likewise now in good condition. The toilets are in the yard and fairly well kept. Facilities are provided for washing and an ample water pressure is available. A private sewer and a hauling handles the refuse.

Pierceton:

Reid-Murdock & Company.—This is one of the branch plants operated in Indiana by the above named Chicago firm. A general line of fruits, vegetables and condiments are packed. The building is of frame in good condition. The floors are wood, in good condition. Toilets are in the yard and are well kept. Wash rooms and dressing rooms are provided and ample water pressure is available for cleansing the floors and machinery.

Plymouth:

Plymouth Canning and Packing Company.—Tomatoes, corn and tomato pulp is the product packed. The building is a frame, in good condition. The floor is a tight board floor. Outside toilets are well kept and wash rooms are provided.

Portland:

W. H. Hood Canning Company.—The business of this company is done in a fair frame building with a good concrete floor. Facilities are provided for washing and an ample water pressure is provided. Solids are hauled away and other waste is disposed of by sewer.

Princeton:

Princeton Canning Company.—The frame building and board floors are in fair condition. Outside toilets are screened and well kept. Refuse is hauled away in part and turned into the open ditch in part. Sewerage will be provided, as ordered, before next packing season. Tomatoes and tomato pulp are packed. three to five ounces of benzoate of soda is used to the five gallons.

Rising Sun:

Rising Sun Canning Company.—This is a good factory in a good frame building with good board floors. Outside toilets are kept in good condition and facilities for washing are provided. The solid refuse is burned under the boiler and other waste is sewered into the Ohio River. This is one of three places using barrels in which to pack tomato pulp. Tomatoes are also packed.

Rochester:

Rochester Canning Company.—Corn, peas and tomatoes are packed by this company in a good frame building. A cement floor is well kept as is also the toilets in the yard. Wash rooms are provided. The refuse is run into a cesspool.

Saratoga:

Warren & Harshman Canning Company.—These people pack corn, sweet potatoes and tomatoes. Their building is of frame and in good condition. The floors are of board, also in good condition. Outside toilets are fairly well kept. Wash rooms are provided and the refuse is disposed of by sewer and hauling.

Scottsburg:

Scottsburg Canning Company.—A good frame building with part wood and part concrete floors is the home of this factory, one of the oldest food producing establishments in the State. It is well organized and successfully operated and conducted with due regard to sanitary conditions. A general packing business is done.

Ox Valley Canning Company.—This plant packs tomatoes, only, and has a fair frame building with poor board floors. Outside toilets are in fair condition and facilities for washing are provided. The drainage is unsatisfactory.

Seymour Canning Company.—The building here is a good frame and the board and concrete floors are in good condition. The outside toilets are well kept. The premises are as clean as a well kept door yard. Tomatoes and pumpkins are packed.

Sharpsville:

Sharpsville Canning Company.—Tomatoes, string beans and tomato pulp are packed, all in tin. The building is of frame, in good condition and the concrete floors are well kept. Outside toilets are in fair condition and wash rooms are provided. The refuse is disposed of by way of an open ditch and a sewer.

Shelbyville:

Shelbyville Canning Company.—Corn is the only product packed by this company. The work is done in a good frame building with a concrete floor. Wash rooms are provided and the outside toilets are in fair condition. A drain tile carries away the refuse.

Shirley:

Shirley Canning Company.—Tomatoes, only, are packed here. The building is of frame construction and is in fair condition. The floors are of concrete and are kept well washed—noon and night. Fairly good toilets are located in the yard. Wash rooms are provided and solid waste is hauled and dumped one hundred feet away; other waste is carried by open ditch. The drainage here is unsatisfactory.

Spiceland:

Citizens Canning Company.—This factory is too good to pack nothing but tomatoes. It should be operated throughout the year. The building is a good frame with good concrete floors. Ample water pressure is available and the floors and machinery are kept well cleaned. The outside toilets are in fair condition. Solid waste is hauled 140 rods away from the factory and other refuse is carried away by good sewerage.

Sunman:

Sunman Canning Company.—This company packed tomatoes and green beans this year. The frame building is in fair condition and the board floors are also fair. Toilets, located in the yard, are fairly well kept. The refuse is disposed of by hauling and sewering.

Tipton:

Snider Catsup Company.—This is a branch plant of the Cincinnati packer and is a good one, constantly making improvements. The building is of brick and is in good condition. The floors are of concrete and are also in good condition. Sanitary inside toilets and wash rooms are provided. The refuse is sewered away. The plant is well managed and successfully operated.

The Fame Canning Company.—Peas, corn, tomatoes and tomato pulp are packed by this factory. The building is constructed of brick and frame and is in good condition. Floors in the work rooms are of concrete and are well kept. Good outside toilets are maintained. Wash rooms and dressing rooms are provided and the refuse is disposed of through the city sewer. The pulp is packed in cans.

Tell City:

Tell City Canning Company.—Packs tomatoes, only. The frame building is in fair condition. The board floor is good. Outside toilets are fairly well kept. Washing facilities are provided. The drainage is unsatisfactory.

Terre Haute:

The Louden Packing Company.—This factory, a long time in operation, and well known, has practically builded new within the past year. The only product is tomato catsup, for the manufacture of which extensive and expensive equipment has been installed. The building is of brick, in good condition. The floors are concrete and are kept very clean. Wash rooms and dressing rooms are provided. The refuse is carried away by the city sewer. A chemist for making tests of the product and a physician to look after the health of operatives are employed and are in attendance at all times.

Underwood:

Hoagland Brothers.—Tomatoes, hominy, kraut, pork and beans and tomato pulp are packed by this firm. They use ten ounces of salt to each five-gallon can of pulp. The firm is constantly making improvements, having this year, along with the other work laid over 15,000 square feet of concrete floors. They will put down 8,000 feet more next year. The plant will then be in splendid condition and is now well organized, well managed and successfully operated.

Vallonia:

Vallonia Canning Company.—This is a new plant built this year on the farmer's co-operative plan. The promoter built as cheaply as possible, and when the inspector arrived, just as the packing season opened, a part of the work was ordered built over again. The building is now in fair condition, being of frame with board floors, sewer connection, good outside toilet and washing and dressing rooms. Tomatoes are packed.

Vienna:

Vienna Canning Company.—This company packs tomatoes and pulp in a fair frame building with board floors in fair condition. Solid waste is hauled away and other refuse is carried away by a private sewer. Outside toilets are in fair condition and facilities for washing are provided.

Vincennes:

Dyer Packing Company.—This company operates throughout the year and does a general packing business. The frame building is a good one. The operating floors are concrete, generally, and in good condition. Outside toilets are well kept, and the city sewer is employed to carry away the waste. The factory is successfully operated and well organized.

Wabash:

Wabash Canning Company.—This company operates in a stone building with concrete floors, all in good condition. Wash rooms are provided and outside toilets are maintained in fair condition. Tomato pulp is made from the whole sound fruit and packed in five gallon cans. Other products are beans, peas, corn and tomatoes. The refuse is carried away by sewer. The plant is well organized and successfully operated.

Walkerton:

Atwood Brothers.—This plant is housed in a brick and frame building, in fair condition. The floors are of wood, in fair condition. The refuse is disposed of by way of a natural drain. Catsup is made from the whole fruit and packed with sixteen ounces of benzoate of soda to each barrel. Pickles are also packed.

Warsaw:

Cruikshank Brothers Company.—This foreign company does a general packing business in a good brick building. The floors are concrete, and well kept. Outside toilets are kept in fair condition and wash rooms are provided. The refuse is disposed of through an open drain. Tomato pulp is packed in barrels.

Washington:

T. A. Snider Preserving Company.—This place operates as a branch plant of the Cincinnati firm for the packing of tomato pulp, and was visited two times by the inspector during the packing season. On the first visit operations were halted and stringent orders issued for the betterment of the plant. Operation had commenced in an old dilapidated hub factory, with unsatisfactory floors, the walls black with the accumulated smoke and dust and cobs of many years, the coal bin and boiler and engine rooms not separated from the washing, cyclone and cooking departments and the packing of the pulp accomplished in an open shed adjoining this building. The manager went heroically to work laying concrete, building tight partitions, putting in windows, painting and whitewashing and actually made a fairly respectable looking place out of a disreputable looking old "ramshack." But the great wonder of the whole matter is that a large manufacturing concern, sending its food products all over the United States, should start to do business in such a place, or wait to be compelled to put its plant in a decent sanitary condition.

Westfield:

Hamilton County Packing Company.—This is a branch of the Van Camp plant at Indianapolis. Corn, tomatoes and catsup are packed in a fair frame building. The floors are board and are also fair. Outside toilets are only fairly satisfactory. The sewage is hauled away. Wash rooms are provided and ample water pressure is available for cleansing. Tomato pulp is made from whole sound fruit.

Whiteland:

Whiteland Canning Company.—This company packs tomatoes and small vegetables and pulp, which last is made from the skins and cores. The building is a fair frame and the floors are boards, and in fair condition. There is concrete laid under the floors of the operating rooms, which when well flushed, makes the conditions quite satisfactory. Wash rooms are provided and the refuse is carried away by a drain tile.

PREPARED MUSTARD.

H. E. Barnard and H. E. Bishop.

The authors have recently had occasion to examine a number of samples of Prepared Mustard. The data first obtained seemed inadequate to determine whether or not the samples were legal or adulterated, and rather complete analysis of samples of Compound Mustards purchased on the open market has therefore been undertaken. The factors determined were the total solids, ash, sodium chloride, acidity as acetic, starch, crude fiber, protein, other extract and the presence and identification of colors and preservatives.

An abstract of the work then finished was presented at the mid-winter meeting of the American Chemical Society. The analyses of the samples at hand has since then been completed and the final results are here given.

The so-called Government standard for Prepared Mustards is as follows: "Prepared Mustard, German Mustard, French Mustard, Mustard paste, is a paste composed of a mixture of ground mustard seed or mustard flour with salt, spieces and vinegar, and, calculated free from water, fat and salt, contains not more than 24% of carbohydrates calculated as starch, determined according to the official methods, not more than 12% of crude fiber nor less than 35% of protein, derived solely from the materials named."

Like all standards, those for Prepared Mustard represent the average composition of samples supposed to be genuine or approximating the best ideals of the manufacturer, and the fact that the courts have very generally accepted the limits laid down by these standards as correct has given them much legal weight, even in states where they have not been enacted bodily into the statutes. Where such statutes have been enacted there seems to be no greater reason for questioning their validity or the chemical limits imposed than there is for questioning any other legislation which is of a regulative character.

It is always interesting and occasionally profitable to compile statistics, especially if the ground has not hitherto been thoroughly covered, and the authors in their efforts have endeavored to collect new data which is of value in showing the character of mustards which under present standard are either genuine or adulterated. At the Geneva Congress[1] it was held that only the seeds of *Brassica Nigra, B. juncea* and *Sinapis alba* should be used in the manufacture of mustard. An association of manufacturers[2] agreed in 1907 that Dijon Mustard should be prepared solely from the seeds of *Brassica Nigra.* Dijon Mustard is prapared by mixing the crushed seeds with aromatic and salted vinegar and acetic acid. Prior to 1905 such mustard frequently contained starch, but its use is now rare. Food Inspection Decision 137[3] held that a condiment prepared from mustard or mustard flour and charlock with salt, spices and vinegar is not prepared mustard, and required that if charlock were used the preparation should be called "Prepared Mustard and Charlock."

It is significant of the divergent ideas of analysts and manufacturers to observe that the standard for prepared mustard allows the presence of not more than 24% of carbohydrates calculated as starch, although the Food Inspection Decision, and the standards adopted at the Geneva Congress and by the manufacturers above quoted do not allow starch save only as it may be present in small quantities due to unripe seeds. The genuine seeds of *Brassica Nigra* seldom contain more than 3% of starch.

The late chief analyst of Canada, Macfarlane, in 1890, examined 95 samples of commercial mustards. Following the custom of his predecessor, he holds that for medicinal purposes but 22% of fixed oil is required, thus allowing the admixture of about 30% of inert material, that is, farinaceous or starchy matter.[4] Macfarlane refers to a regulation of the New Jersey State Board of Health allowing 25% of starch in compound mustards and to a similar limit established in England by a judicial decision. In speaking of compound mustards he says, "Some people assert that since there is abundant evidence to show that mustard as sold in Canada markets is largely subject to adulteration, it is just as well that this state of affairs should continue to exist and that so long as the mustard contains nothing injurious and is marked or sold as compound the public has not much to complain of." He, however, says that some limit should be set to the amount of diluting substances added, and to that extent at least he is, I think, in line with the food chemists of this country. In 1897[1] Chief Analyst Macfarlane in bulletin 50 submits the results of the analyses of 66 samples of commercial mustard and repeats his recommendations as to the amount of fixed oil required both in pure mustards and in compounds.

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[1] Ann. des Falsif. 1909, 2. 215–220.

[2] *Ibid.*

[3] U. S. F. I. D. 137.

[4] Bull. 19, Lab. I. R. D. Canada.

It is to be remembered that all of Macfarlane's work dealt with dry mustards and not with the prepared mustards with which this paper is concerned. From the little information at hand concerning the composition of compound mustards as understood in France, in Canada and in this country we are led to the conclusion that there is no international standard observed either by manufacturers or analysts. Certainly the so-called French mustards sold in this country would not be legal in France nor would some of the compound mustards passed as legal under our standard comply with the regulations of the Internal Revenue Department of Canada.

In all 32 mustards were analyzed. All of these mustards were so-called prepared mustards consisting of starch and salt ground up in vinegar and with or without turmeric as an added spice and coloring. Fifteen samples met the requirements of our standard as to minimum of carbohydrates and crude fiber present and the maximum of protein. Seventeen samples were illegal, in ten cases because of an excess of carbohydrates, in two cases because of an excess of crude fiber and in four cases because the protein content was low. In four cases the goods were deficient in more than one factor.

The figures from which these results were derived were calculated free from water, fat and salt. This method of calculation takes no account of the great dilutions with water or acetic acid, and we have, therefore, no real basis upon which to calculate the actual value of the material save by computing results on a water free basis. It goes without saying that a compound mustard containing less than 13% of total solids including salt and crude fiber is far less valuable than a mustard containing 20% or over of total solids, and yet under the standards imposed the dilute mustard compound is as legal as the more concentrated product. This fact prompts the query, "Should not standards which refer data to the dry, or other calculated basis, limit the extent to which dilution may be carried?"

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[1] Bull. 50, Lab. I. R. D. Canada.

Should not Prepared Mustard, for instance, admitting the validity of the modern method of preparation by adding starch, at the same time exact some definite amount of dry substance and so prevent the possibility of subjecting the goods to infinite dilution?

Under the present standard the water content can be increased to any limit desired by the manufacturer, the only restriction imposed being that the goods be a "paste." If the standard now in use were amended by inserting the phrase "and not less than 15% of solid matter, exclusive of salt," we should have a product of at least some definiteness of composition.

ANALYSES OF PREPARED MUSTARDS.

*Indicates deviation from standard.

Laboratory No.	Volatile 100° C.	Total Solids.	Ash.	NaCl.	Acid as Acetic.	Carbohydrates.	Crude Fiber.	Protein.	Calculated free from Water, Fat and Salt.				
									Ether Extract.	Carbohydrates.	Crude Fiber.	Protein.	Ether Ex. on Dry Basis.
13236	60.34	39.66	10.40	8.170	3.66	8.000*	1.53	7.608	....	....	....	....	....
13239	89.35	10.65	1.94	1.594	2.62	7.560*	9.23	2.605	....	....	....	....	....
20713	82.27	14.73	2.21	1.435	4.44	5.400*	0.92	4.293	....	....	....	....	....
16150	80.91	19.09	1.92	1.311	0.18	5.076*	0.01	4.126	....	....	....	....	....
18244	78.18	21.82	6.18	5.186	3.09	5.715*	1.02	4.801	....	....	....	....	....
19288	84.13	15.87	3.01	1.996	3.06	7.425*	1.20	3.120	....	....	....	....	....
20726	87.15	12.85	3.19	2.655	4.74	2.700	1.65	2.974	....	....	....	....	....
20727	77.39	22.61	3.46	2.499	3.30	14.760*	....	6.000	....	....	....	....	....
21966	85.92	14.08	2.47	1.581	3.24	2.215	1.66	4.256	3.560	24.79*	18.57*	47.62	25.28
21968	....	....	2.81	1.834	2.64	2.755	0.10	3.853	1.707	....	....	....	22.20
21969	85.72	14.28	2.21	1.182	3.12	2.778	1.56	3.214	3.041	27.62*	15.51*	31.95*	21.30*
21970	84.24	15.76	2.56	1.151	3.12	2.239	1.81	4.038	3.327	19.84	16.04*	35.80	21.10*
21971	86.28	13.72	2.20	1.130	2.26	1.440	1.55	4.611	1.989	13.58	14.63*	43.50	14.50*
21972	82.84	17.16	3.07	1.796	3.18	1.743	0.33	4.425	4.426	15.94	3.02	40.45	25.80
21973	82.63	13.37	2.96	2.273	2.64	1.485	0.65	3.108	3.210	18.80	8.23	39.36	24.00
21974	85.40	14.60	2.39	1.596	3.24	2.103	0.60	4.076	3.598	22.23	6.34	43.05	24.64
21975	81.38	18.62	3.46	2.616	2.76	5.630	0.18	3.274	1.240	38.11*	1.22	21.19*	6.66*
21976	85.23	14.77	2.29	2.095	3.24	1.661	0.26	3.444	2.981	17.13	2.68	35.53	20.18*
21977	84.28	15.72	3.30	2.497	3.00	2.363	0.26	3.902	3.184	15.71	1.73	25.94*	20.26*
21978	84.30	15.70	2.57	2.698	3.42	2.150	0.09	3.665	3.224	21.98	0.90	37.48	20.54*
22088	77.13	22.87	3.10	1.908	3.72	1.519	0.22	5.839	7.641	11.40	1.65	43.84	33.40
22098	84.48	15.52	4.42	3.813	2.76	0.765	0.63	2.965	1.536	7.52	6.19	29.16*	9.90*
22054	92.09	17.91	2.47	1.563	3.72	2.037	0.44	4.833	5.384	18.58	4.02	45.13	30.06
22058	86.47	13.53	2.67	1.886	2.30	1.474	0.23	3.232	3.495	18.04	2.85	39.57	25.82
22089	83.54	16.46	2.32	1.365	3.96	1.733	1.06	4.070	4.774	16.76	10.30	39.43	28.80
22090	85.10	14.80	2.83	1.970	2.64	1.271	0.85	3.403	2.559	11.28	7.54	30.19*	17.30*
22091	87.57	12.43	2.43	1.851	2.04	0.745	0.33	4.004	1.827	7.61	3.38	41.06	14.70*
22092	85.49	14.51	3.26	2.626	2.70	1.507	0.13	3.434	3.740	18.48	1.59	42.12	25.78
22093	85.08	14.92	2.47	1.662	3.00	1.451	0.43	3.709	3.412	14.74	4.37	37.67	22.86
22094	85.68	14.32	2.93	2.127	2.30	1.369	0.38	3.497	2.172	13.66	3.79	34.12*	15.16*
22165	84.93	15.06	3.68	2.954	3.30	0.450	0.30	3.739	3.599	5.11	3.41	42.45	23.90
21796	77.14	22.85	3.11	1.539	3.72	1.496	0.66	5.536	7.495	10.82	4.78	40.25	32.10
22097	....	20.48	3.10	....	....	....	....	....	....	....	....	....	....
22591	....	10.73	1.40	....	....	....	....	....	....	....	....	....	....
22593	....	25.02	4.51	....	....	....	....	....	....	....	....	....	....
22595	....	14.14	3.72	....	....	....	....	....	....	....	....	....	....
22599	....	11.49	3.01	....	....	....	....	....	....	....	....	....	....
22650	....	12.08	3.19	....	....	....	....	....	....	....	....	....	....

THE COMPOSITION OF CANNED PEAS.

Charles F. Coffin and H. E. Barnard.

The literature showing the composition of canned vegetables is scanty, the data at hand being limited in most instances to the analyses of few samples. The assumption that the data at hand holds for canned vegetables as a class is not warranted with facts. It has been known for some time that the composition of peas varied greatly, depending chiefly upon the maturity of the peas. In order to determine the varying composition of peas canned throughout their season of growth we have analyzed ten samples of peas representing the ten brands put out by one manufacturer and ranging from the smallest and most tender peas known as the Petit Pois, to the largest and most mature pea bearing the brand of Marrow-fat. In addition there is included in the table following, the analysis of a sample of canned dried peas sold as "soaked."

The liquor in which the peas are packed was analyzed, as well as the liquor-free peas, and in each instance the results obtained were figured both on a dry and on a wet basis. The specific gravity of the liquor is influenced both by the water soluble extract and by the added sugar and salt content. The liquor of heaviest gravity was that used on the dry pack, the lightest on the grade known as Sifted June. The peas of heaviest specific gravity were the so-called Early Junes, the "soaked" peas being of practically the same density. The proteid content of the liquor figured to a dry basis as N X 6.25 varies from 20.71 per cent. observed in the sample of "soaked" peas, to 32.38 per cent., the content of Extra Sifted Junes. The sugar content varied from 16.33 per cent. in the case of low grade early Junes to 48.66 per cent. in high-grade Early Junes. The crude starch of the liquor varied from .93 per cent., the content of Extra Sifted Junes, to 28.93 per cent., in the case of high-grade Early Junes.

The total solids of the peas varied from 14.15 per cent. in the case of Petit Pois, to 28.6 per cent., a little more than twice as much, in the Marrow-fats. The crude starch varied from 32.24 per cent. in the case of Petit Pois, to 59.2 per cent. the content of the Marrow-fats. The total solids varied directly with the crude starch content. The highest ether extract or crude fat content was also observed in the Petit Pois, and the lowest in low grade Early Junes. The highest crude fiber content was observed in Extra Sifted Junes. The next highest in Petit Pois. The lowest crude fiber content was found in the Marrow-fats.

In addition to these important factors much data was collected as to the calcium, magnesium and phosphoric acid content. This data showed great variation in the different samples. The highest phosphoric acid content was observed in the Petit Pois and the lowest in low grade Sifted Junes. The highest magnesium content was noted in Petit Pois.

While it is impossible to estimate the actual value of canned goods in terms of analytical data, it is very interesting to note that the grade of peas usually recognized as of highest quality is high in nitrogen content, low in starch, high in crude fat, high in sugar, high in phosphoric acid, high in crude fiber and low in crude starch. On the contrary, the low grade peas are very low in sugar, crude fat and crude fiber and high in crude starch.

Aside from the interesting fact of the composition of low and high grade peas, the record is of moment in showing the utter unreliability of assuming the analysis of isolated samples to be of any value in a study of the composition of goods of this class.

COMPOSITION OF CANNED PEAS—LIQUOR.

Sample Number.	BRAND.	Condition of Contents.	Contents of Can.			Wet Basis.							Dry Basis.				
			Peas, Grms.	Liquor Grms.	Total Grms.	Sp. Gr.	Total Solids.	Sugar.	Crude Starch.	Proteid, Nx 6.25.	NaCl.	P_2O_5.	Sugar.	Crude Starch.	Proteid, Nx 6.25.	NaCl.	P_2O_5.
7246 B	May Day Marrow Fat...	Peas broken; liquor very turbid.	388.5	192.5	581	1.033	7.1	1.68	1.95	2.11	.55	.086	23.7	27.5	29.78	7.8	1.32
7247 B	May Day Early June....	Peas all broken; liquor very turbid.	421	173	594	1.028	6.77	1.10	1.33	1.98	.79	.080	16.33	19.58	29.21	11.61	1.19
7248 B	May Day Sifted June....	Peas slightly sprouted and broken; liquor less turbid than 7247 B.	322	268	590	1.0135	3.46	.77	.76	1.06	.54	.048	22.27	21.89	30.65	15.68	1.39
7252 B	Greenwood Early June...	Peas large and broken; liquor somewhat turbid.	370	228	598	1.025	5.38	......	.46	1.51	......	......	......	7.89	25.83	......	.....
7253 B	Greenwood Sifted June..	Peas rather small and slightly broken; liquor somewhat turbid.	386	210	596	1.0277	6.13	......	.56	....	......	......	......	9.06	....	......	.....
7254 B	Greenwood Extra Sifted June.	Nearly all peas slightly broken; liquor slightly turbid.	379	219	598	1.0244	5.34	......	.16	1.37	......	......	......	3.00	25.59	......	.....
7249 B	Polk's Best Early June...	Peas slightly sprouted and broken; liquor slightly turbid.	391	207	598	1.026	6.39	3.11	1.85	2.06	.78	.073	48.66	28.93	32.22	12.17	1.15
7250 B	Polk's Best Sifted June..	Peas slightly sprouted and broken; liquor slightly turbid.	370	216	586	1.0178	4.58	1.52	.58	1.38	.54	.071	33.15	12.72	30.07	11.71	1.55
7251 B	Polk's Best Extra Sifted June.	Peas small, not much broken; liquor nearly clear.	360	235	595	1.0218	4.73	......	.04	1.53	......	......	......	.93	32.38	......	.....
7255 B	Polk's Best Petit Pois....	Peas small, rather badly broken; liquor nearly clear.	351	243	594	1.0208	4.98	......	.11	1.41	......	......	......	2.35	28.27	......	.....
7256 B	Everybodys............	Peas large, all broken; liquor muddy.	408	204	612	1.034	8.2	1.7	1.85	1.7	.93	.123	20.7	22.6	20.71	11.3	1.51

COMPOSITION OF CANNED PEAS—LIQUOR—Continued.

Sample Number.	**Brand.**	Condition of Contents.	Contents of Can.			Wet Basis.											
			Peas, Grms.	Liquor Grms.	Total Grms.	Sp. G. of Peas.	Total Solids.	Proteid N x 6.25.	Ether Extract.	Sugar.	Crude Starch.	Crude Fiber.	Ash.	NaCl.	Ca.	Mg.	P_2O_5.
7246 B	May Day Marrow Fat...	Peas broken; liquor very turbid.	388.5	192.5	581	1.065	28.6	5.92	.56	.89	16.93	1.77	1.04	.34	.034	.022	.208
7247 B	May Day Early June....	Peas all broken; liquor very turbid.	421	173	594	1.123	24.19	5.74	.38	1.14	11.04	1.74	1.10	.52	.038	.019	.172
7248 B	May Day Sifted June....	Peas slightly sprouted and broken; liquor less turbid than 7247 B.	322	268	590	1.106	25.43	5.19	.49	.66	14.21	2.06	.85	.32	.063	.028	.158
7252 B	Greenwood Early June...	Peas large and broken; liquor somewhat turbid.	370	228	598	1.099	25.31	5.21	.49	1.22	12.74	1.98	1.27	.64	.038	.022	.179
7253 B	Greenwood Sifted June..	Peas rather small and slightly broken; liquor somewhat turbid.	386	210	596	1.090	23.06	5.10	.47	1.39	9.72	1.62	1.26	.65	.043	.012	.165
7254 B	Greenwood Extra Sifted June.	Nearly all peas slightly broken; liquor slightly turbid.	379	219	598	1.063	19.15	3.89	.53	1.31	8.06	1.74	1.33	.92	.044	.023	.128
7249 B	Polk's Best Early June...	Peas slightly sprouted and broken; liquor slightly turbid.	391	207	598	1.112	24.68	5.88	.50	1.32	13.06	2.00	.97	.41	.034	.031	.166
7250 B	Polk's Best Sifted June...	Peas slightly sprouted and broken; liquor slightly turbid.	370	216	586	......	19.04	4.10	.50	1.44	8.86	1.99	.67	.23	.034	.020	.147
7251 B	Polk's Best Extra Sifted June.	Peas small, not much broken; liquor nearly clear.	360	235	595	1.072	16.65	3.73	.39	1.62	5.42	1.92	.96	.43	.035	.018	.131
7255 B	Polk's Best Petit Pois....	Peas small, rather badly broken; liquor nearly clear.	351	243	594	1.075	14.15	3.16	.42	1.85	4.56	1.54	.95	.58	.022	.021	.142
7256 B	Everybodys............	Peas large, all broken; liquor muddy.	408	204	612	1.120	27.5	5.09	.55	1.11	13.98	1.90	1.32	.66	.041	.022	.185

COMPOSITION OF CANNED PEAS—DRY BASIS.

Sample Number.	BRAND.	Condition of Contents.	Contents of Can.			Proteid, Nx 6.25.	Ether Extract.	Sugar.	Crude Starch.	Crude Fiber.	Ash.	Alkalinity of Ash.*	NaCl.	Ca.	Mg.	P_2O_5.	Salt-Free Ash.
			Peas, Grms.	Liquor Grms.	Total Grms.												
7246 B	May Day Marrow Fat.	Peas broken; liquor very turbid.	388.5	192.5	581	20.7	1.96	3.1	59.2	6.18	3.65	2.1	1.16	.12	.077	.73	2.49
7247 B	May Day Early June.	Peas all broken; liquor very turbid.	421	173	594	23.71	1.59	4.7	45.65	7.18	4.55	2.4	2.19	.16	.081	.714	2.36
7248 B	May Day Sifted June	Peas slightly sprouted and broken; liquor less turbid than 7247 B.	322	268	590	20.41	1.94	2.61	55.87	8.09	3.34	2.3	1.29	.25	.113	.639	2.05
7252 B	Greenwood Early June.	Peas large and broken; liquor somewhat turbid.	370	228	598	20.58	1.93	4.81	48.16	7.84	5.02	2.2	2.55	.15	.090	.716	2.47
7253 B	Greenwood Sifted June.	Peas rather small and slightly broken; liquor somewhat turbid.	386	210	596	22.11	2.03	6.01	42.14	8.03	5.48	2.2	2.82	.19	.054	.675	2.66
7254 B	Greenwood Extra Sifted June.	Nearly all peas slightly broken; liquor slightly turbid.	379	219	598	20.33	2.77	6.83	42.07	9.08	6.95	2.2	4.86	.23	.118	.640	2.09
7249 B	Polk's Best Early June.	Peas slightly sprouted and broken; liquor slightly turbid.	391	207	598	23.83	2.07	5.35	52.91	8.09	3.94	2.3	1.66	.14	.126	.667	2.28
7250 B	Polk's Best Sifted June.	Peas slightly sprouted and broken; liquor slightly turbid.	370	216	586	21.54	2.64	7.54	46.52	10.43	3.54	2.5	1.20	.18	.102	.738	2.34
7251 B	Polk's Best Extra Sifted June.	Peas small, not much broken; liquor nearly clear.	360	235	595	22.41	2.32	9.68	32.53	11.55	5.75	2.5	3.22	.21	.108	.784	2.53
7255 B	Polk's Best Petit Pois.	Peas small, rather badly broken; liquor nearly clear.	351	243	594	22.36	2.94	13.10	32.24	10.91	6.69	3.7	4.13	.15	.126	.854	2.56
7256 B	Everybodys.........	Peas large, all broken; liquor muddy.	408	204	612	18.51	2.03	4.02	50.85	6.92	4.79	2.4	2.4	.15	.090	.756	2.39

*C.C. $\frac{N}{10}$ HCl per gram of sample.

THE COMPOSITION OF FREE OYSTER LIQUOR.

EMMA CRANDAL AND H. E. BARNARD.

Prior to the passage of State and Federal Food Laws, oysters of commerce were shipped in containers for which the refrigerating material was ice placed in contact with the shucked oysters. When the ice melted more was added to prevent spoilage. As a result of this dilution oysters reached the retailer heavily adulterated with water. The retailer employed the same method of refrigeration and the consumer, instead of buying oysters, generally paid for water to the extent of 25% to 75% of the total bulk of his purchase. In addition to this trade practice which in effect amounted to gross adulteration, oysters have, for several years, been floated; that is, removed from their beds to water containing a lower chlorine content where by purely physical causes they "fatten"; that is, absorb water until they are plump in appearance.

With the advent of food laws efficiently enforced, this practice, as well as the practice of refrigeration by direct contact with ice, has been abandoned—that is, supposedly abandoned. During the last few months, however, oysters reaching the central states, have shown a larger content of free liquor than for the past two years. It has been impossible to prevent the sale of such oysters when relying as evidence for the court upon the indefinite standards of composition of oysters now at hand. One state, for instance, requires the free liquor content to be no more than 15%; another that the dried solid content should be at least 10%. Neither of these standards are based on real information as to the composition of the oyster and oyster liquor, and for the purpose of determining whether or not it is possible by analyses of the free liquor, to obtain data which will establish the presence or absence of added water, the author is making a study of oysters and oyster liquor. The data which is being collected will show the per cent. of free liquor in the samples studied, the immersion refractometer reading, the per cent. of solids, the per cent. of nitrogen, the ash both wet and dry, the sodium chloride both wet and dry, the calcium content of wet and dry samples. The analyses of the meats will show the solids, nitrogen, ash, sodium chloride and calcium figured on both a wet and dry basis. The figures thus far available are not sufficiently complete for presentation. The following significant facts are, however, noted: In one sample containing 15.1% of free liquor, the sodium chloride content of the dry residue of the liquor is 7.23%. The sodium chloride content of the dry residue of the liquor of a sample containing 8.3% was .866. The nitrogen content of these same two samples were 6.35% and 5.74% respectively. The calcium content of this same residue was .49 and .063% respectively. Such variations prompt the query—why should oyster liquors of nearly the same composition so far as their nitrogen content goes, be altogether different in their sodium chloride and calcium content?

A study of the meats of the same samples showed notrogen content of 9.25% and 7.02%. The sodium chloride content of .406% and .020% and calcium content of .49% and .063%. The interpretation of this data is still further complicated by the fact that the solid content of the first sample, that is the sample with the high salt and calcium, is .291, while the solid content of the sample with the low salt and calcium factors is 6.47. These two analyses selected at random from a long list indicate the difficulties confronting the analyst who may wish to determine by the light of the data at present obtainable, whether or not samples submitted to him are pure or adulterated. It is the purpose of the author to continue the investigations at length, studying samples of known purity and as well samples which have been manipulated, watered and otherwise adulterated.

THE ANALYSIS OF SOME COUNTRY BUTTERS.

James Brown, Ph.D.

The superiority of creamery butter over the country product has been conceded ever since the careful technic of the factory butter maker made it possible to avoid the errors which make country butter ununiform in composition and of varying flavor. The modern butter maker produces butter which is of nearly the same composition the year round and as result his goods command the highest market price. Country made butter, on the contrary, carelessly made of poorly handled materials and held until sold without any attempt at refrigeration, is frequently so rancid that it has no value even for cooking purposes until it has been reworked at the renovated butter factory.

In an endeavor to determine the chemical difficulties which might explain the varying character of the country butter as compared with the creamery product, Dr. James Brown has made a series of analyses of country butters in various stages of rancidity and decomposition. In reporting his results, he says in part, as follows:

"'Comparing rancid butters with wholesome butters,[1] we note unmistakably the higher content of 'total free acid' and 'free volatile acid' in the former as compared with the latter. The wholesome butters show no 'free volatile acid,' and small amounts of 'total free acid.' "

The wholesome butters show no alcohol test, and in general smaller amounts of lactose than do the rancid butters. The latter comparison, however, is only qualitative, but seems quite certain.

Comparing the different rancid butters with each other, we find it is true in a general way that the samples which show the higher "total free acid" values, contain also the larger amounts of "free volatile acid." These two numbers may be taken in a general way as a measure of the rancidity. It is also generally true that high rancidity is accompanied by small per cent. of salt, also perhaps by large amount of curd. The presence of lactose, due probably to milk not removed from the butter, seems also to be contributory to rancidity.

The causes of rancidity and of other disagreeable flavors in butter are so numerous that an analysis of a large number of samples is desirable in order to secure data upon which to establish conclusions.

In general it may be said that rancidity is often caused by failure to remove the milk sufficiently after churning. Large amounts of salt tend to prevent rancidity.

The "total free acid," "free volatile acid" and perhaps also the alcohol test, are the chemical means of measuring rancidity.

None of the butters tested showed aldehyde test with Schiff's reagent or with pyrogallol plus hydrochloric acid, though the literature states that aldehyde may be among the contents.

The odor of some rancid butters and some indefinite references in the literature suggest esters as among the contents. No tests along this line were made in the work here submitted.

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[1] Blyth—Foods, their composition and analysis, page 305.

ANALYSES OF SOME COUNTRY BUTTERS

Sample.	Water.	Curd.	Salt.	Fat.	Reichert-Meissl No.	Soluble Acids.	Insoluble Acid.	Tota Free Acid.	Free Volatile Acid.	Same as preceding calculation for Fat.	Alcohol Test.	Lactose Test.
C 2905	10.36	1.29	.93	87.41	27.45	5.52	88.61					
	10.63	1.00	.85	87.51								
C 2906	11.75	1.06	1.37	85.82	29.23	5.66	87.61					
	11.55	1.17	1.27	86.01								
C 2907	11.70	1.64	1.64	85.01	26.41	4.98	88.02					
	11.76	1.57	1.70	84.96								
B. V	12.29	1.63	2.47	83.53	27.95	5.81	87.29	1.17	None	None	None	Test.
B 2900	12.79	1.45	2.49	83.22								
"P. B." B 2901	9.73	1.02	1.87	87.38				.87	None	None	None	Trace.
Polk's	16.22	.698	4.68	78.40								
B 2902	17.13	.632	4.968	77.27				1.34	None	None	None	Test.
	17.16	.641	5.109	77.09								
B 2903	9.94	1.04	1.41	87.61				3.24				
B 2904	12.26	1.38	1.3	85.06				3.46				
B 2905	11.41	1.8	.77	86.02				12.07	.515	.598	Trace	Test.
B 2906	11.25	1.07	1.33	86.60				2.52	.234	.270	Trace	Test.
B 2907	11.87	1.61	1.59	84.93				5.71	.384	.452	Trace	Test.
B 2908	9.71	1.20	1.20	87.89				6.10	.364	.414	Trace	Trace.
B 2909	17.62	1.91	.45	80.02				6.26	.293	.366	Trace	Test.
B 2910	14.01	.72	2.36	82.91				6.06	.464	.559	Doubtful	Test.
B 2911	12.71	1.90	1.07	84.32				5.81	.427	.506	Trace	Trace.
B 2912	14.49	1.78	1.33	82.40				5.97	.318	.385	Trace	Strong Test.
B 2913	21.47	1.76	.99	75.78				7.87	.468	.617	Trace	Trace.
B 2914	11.16	1.76	3.05	84.03				3.87	.243	.289	Trace	Test.

THE BENZOATE OF SODA CONTROVERSY.

In December, 1908, the District Court of the United States for the District of Indiana was asked to enjoin the State Board of Health and H. E. Barnard, State Food Commissioner, from enforcing certain provisions of the Pure Food Law which prohibit the use of preservatives in food stuffs. The complainants, the Williams Brothers Company, of Detroit, Michigan, and the Curtice Brothers Company, of Rochester, N. Y., filed bill of complaint, alleging among other things, that the defendants in their enforcement of the Pure Food Law and by certain rules, had injured the complainant's business.

After a preliminary hearing at which Federal Judge A. B. Anderson refused to grant the complainants the relief prayed for, the state through a council moved that the petition be dismissed. This petition was also denied, and the entire matter was referred to Edward Daniels, Master in Chancery, with direction to take testimony and report it together with his findings of fact and conclusions of law thereon.

The taking of this testimony occupied much time, and the state was compelled at considerable expense to cross-examine witnesses for the complainants from Maine to California and to prepare and present in support of its defense a great mass of technical evidence. After all evidence had been submitted it was reviewed by the Master, who at length made to the Honorable Albert B. Anderson, Judge of the District Court of the United States for the District of Indiana, the following report:

THE DECISION.

In the District Court of the United States,
for the District of Indiana.

Williams Brothers Company,
Curtice Brothers Company,
v.
Harry E. Barnard,
Fred A. Tucker,
George T. McCoy,
W. M. Wishard,
T. Henry Davis,
J. N. Hurty.
No. 10,894, Chancery.

REPORT OF THE MASTER IN CHANCERY.

To the Honorable Albert B. Anderson, Judge of said District Court:

The undersigned, Master in Chancery, to whom said report was referred, with direction to take the testimony and report the same, together with his findings of fact and conclusions of law thereon, respectfully reports as follows:

At the time and places designated in notices to the respective parties for the taking of testimony he was present and was attended by the respective solicitors of the complainants and the defendants; that the complainants introduced and read in evidence the depositions of witnesses produced by complainants, the said depositions comprising Volumes 1, 2, 3 and 4 of the bound volumes of the evidence in this case, and being indentified by the signature of said Master in Chancery, and are herewith returned and submitted to the court; that the defendants introduced and read in evidence the depositions of witnesses produced by the said defendants, these depositions being Volumes 13 and 14 of the bound volumes of evidence in this case, and being identified by the signature of said Master in Chancery, and are herewith returned and submitted to the court; that witnesses were produced before said Master by both complainants and defendants and gave their testimony; that the testimony of the witnesses so produced was taken down in shorthand by Mr. Rowland Evans, the official stenographer of said court, and the same was by said stenographer written out in longhand and is contained in Volumes 5, 6, 7, 8, 9, 10, 11, 12, 15, 16 and 17, which are identified by the signature of said Master in Chancery, and are herewith returned, together with all the exhibits referred to by said witnesses and by the witnesses whose depositions were taken and submitted to the court.

Upon the pleadings and testimony, the said Master makes and states the following:

FINDINGS OF FACT.

1. The complainant, Williams Brothers Company, is a corporation organized and existing under and by virtue of the laws of the State of Michigan, having its principal office and place of business in the city of Detroit, in the State of Michigan; and the complainant, Curtice Brothers Company, is a corporation organized and existing under and by virtue of the laws of the State of New York, having its principal office and place of business in the city of Rochester, in the State of New York. The defendants are all citizens of the State of Indiana, and residents of said State of Indiana.

2. The said complainants were, respectively, at the time of the filing of the bill of complaint herein, had been for more than twenty (20) years prior thereto, and still are, engaged in the business of preserving, canning and manufacturing tomato and pickle products for the market; said Williams Brothers Company has approximately nine hundred thousand ($900,000.00) dollars in money actually invested and employed in its said business; said Curtice Brothers Company has more than one million five hundred thousand ($1,500,000.00) dollars actually invested in its business. For several years prior to the filing of the bill herein, and especially in the year next preceding such filing, the Williams Brothers Company sold forty thousand ($40,000.00) dollars worth of their products containing benzoate of soda in Indiana annually, upon which its profits were ten thousand ($10,000.00) dollars; for several years prior to the filing of the bill herein, and especially in the year next preceding such filing, the Cur-

tice Brothers Company sold approximately twenty-five thousand ($25,000.00) dollars or thirty thousand ($30,000.00) dollars worth of goods in Indiana annually, of which about one-third contained benzoate of soda, upon which benzoated goods its profits were twelve hundred ($1,200) dollars.

3. The defendant, Harry E. Barnard, is chemist to the State Board of Health for the State of Indiana, and by virtue of being chemist to such State Board of Health, he is State Food and Drug Commissioner; the other defendants are all members of the State Board of Health of the State of Indiana.

4. The amount in controversy in this suit is in excess of two thousand ($2,000) dollars, exclusive of interest and costs.

5. Up to about twenty-five years ago, jams, catsups and pickles were manufactured according to household recipes, and the finished products contained fruit juices, tomatoes and immature cucumbers, together with salt, sugar, vinegar and spices, as the case might be, for condimental and preserving purposes. About that time commercial manufacturers began to use benzoate of soda as a preservative in such products. The benzoin radical is found in cranberries, and possibly some other fruits.

For experimental purposes, benzoate of soda for many years prior to the discovery of toluene, a coal tar product, had been derived from animal urine, but the commercial benzoate of soda is derived from toluene by a process which has been available for some ten years. Even if it were desired to use it, the benzoate of soda from urine is too expensive in its production to permit of its use for commercial purposes, and the only benzoate of soda used for commercial purposes is derived from toluene, as above stated.

Benzoate of soda is colorless, tasteless and odorless when used in limited quantities as a preservative in foods, but it is not a food in itself, and furnishes neither heat nor energy in passing through the alimentary tract. It is frequently administered as a drug and prescribed as a medicine. It is an antiseptic and mild preservative, and, practically speaking, is used as a preservative only in condimental foods; but it is not used in canned or sealed foods which are to be eaten immediately upon the opening of the vessel, jar or can containing the same.

6. As early as 1901, a dispute existed among physicians, physiological chemists and other scientific men as to the harmful or harmless character of benzoate of soda and benzoic acid when used as a preservative in food products in quantities of one-tenth of one per cent., or more. Prior to the enactment of the National Pure Food Law, in June, 1906, the Congressional Committee on Interstate and Foreign Commerce held hearings, at which a number of witnesses testified as to the effect of benzoate of soda when ingested in food products, and there was at that time a difference of opinion as to the harmlessness or harmfulness of such benzoate of soda and benzoic acid when so taken into the human system as a preservative in food in the quantities above named. Continuously since 1901 there has been a diversity of opinion among physicians and other scientists upon this question, and this diversity of opinion still exists, as is evidenced by the conclusions reached upon the metabolic experiments re-

spectively conducted under the direction of Dr. Harvey W. Wiley, then chief of the Bureau of Chemistry of the United States Department of Agriculture, and the members of the so-called "Referee Board," as hereinafter stated.

Dr. Harvey W. Wiley, late chief of the Bureau of Chemistry of the Department of Agriculture of the United States, superintended an investigation of the metabolic effect of benzoate of soda ingested with food, which was taken under a regimen by a number of normally healthy men, ranging from 21 to 50 years of age, and judiciously selected for the purpose of such experiment. Predicating his opinion upon the records of such experiments upon each of such persons, Dr. Wiley announced his belief that benzoate of soda ingested with food, in any quantity, was harmful to the human system.

The above mentioned referee board consisted of five members, appointed in 1908 under the direction of President Roosevelt, and commenced its work after Dr. Wiley's experiments had been ended, and the work was conducted independently of Dr. Wiley and his bureau. Three sets of experiments were conducted respectively at New York, New Haven and Chicago, and upon the data collected from such experiments prominent physiological chemists and other scientists of the United States have predicated the opinion that benzoate of soda, in quantity of one-tenth of one per cent., may be ingested in food without harmful results.

7. By formal stipulation of the parties to this suit, the following facts for the purposes of this suit are to be taken as true, namely:

On the 7th day of July, 1905, the State Board of Health of the State of Indiana passed a rule prohibiting the use in food products of benzoate of soda and benzoic acid, and declaring that products containing such substances were adulterated. On the 15th day of March, 1907, said State Board of Health passed a rule declaring that the presence of any added antiseptic or preservative substances, except common table salt, saltpeter, cane sugar, vinegar, spices, or in smoked foods, the natural products of the smoking process, constituted an adulteration, but permitting, until further notice, the use of one-tenth of one per cent. of sodium benzoate for the preservation of tomato catsup, provided a statement to that effect was printed plainly upon the principal label. On October 8, 1908, said State Board of Health passed a rule permitting the use of sodium benzoate for the packing season of 1908 for preserving tomato catsup. Said rules are the sole and only rules adopted by the said State Board of Health in respect to the use of sodium benzoate. There is no rule of the State Board of Health now in force which permits the use of sodium benzoate or benzoic acid in food products subsequent to the packing season of 1908, and the use of benzoate of soda in said State is prohibited not by rule of said State Board of Health, but by Section 2 of an Act of the General Assembly of the State of Indiana, being Section 7639 Burns' Revised Statutes of Indiana, 1908.

8. By formal stipulation of the parties to this suit, the following facts for the purposes of this suit are to be taken as true, namely:

The defendants, with the exception of Harry E. Barnard, aside from the part they took as members of the State Board of Health in adopting said rules, have never at any time had anything to do with prohibiting the use of benzoate of soda in food products sold by complainants within the State of Indiana, except as such rules had such effect. The defendant, Barnard, as State Food and Drug Commissioner, has continuously, since March, 1907, had full charge and control of enforcing the rules of said State Board of Health in reference to the use of preservatives in food products in said State, including benzoate of soda, and in the issuing of orders, directions and bulletins in connection therewith. The defendants, with the exception of Harry E. Barnard, have never at any time in any way intimidated or coerced the public generally or the purchasers of complainants' goods from buying or selling complainants' goods, except as the rules adopted by them had such effect, together with an expectation that they would be promulgated and the public notified that a violation thereof would be a misdemeanor. The defendants, with the exception of said Barnard, have never entered into any conspiracy to ruin any part or portion of complainants' business by bringing to bear upon any of complainants' customers in said State intimidating or coercive means, except as permitting said rules to be promulgated, may have had such effect. None of said defendants have ever instituted or commenced any criminal prosecution or civil suit against the complainants within the State of Indiana, or elsewhere, of any kind, and neither of the complainants has ever been prosecuted for the use of benzoate soda or for any other alleged violation of the Indiana Pure Food Law, being Sections 7638 to 7649, inclusive, of Burns' Revised Statutes of Indiana, 1908.

9. In a number of instances by letters, correspondence and in verbal interviews, the defendant, Barnard, as State Food and Drug Commissioner and chemist to the State Board of Health, has advised dealers, firms, persons and corporations that the use of benzoate of soda as a preservative in food products would be permitted only in tomato catsup, and that only for the summer of 1908, and that the use of benzoate of soda in any other article of food was prohibited under the laws of Indiana; and said Barnard, during the time mentioned, instructed inspectors of the food and drug department of the State Board of Health to so advise dealers, firms and corporations throughout the State of Indiana. The said defendant, Barnard, has advised personally and through his inspectors, many persons throughout the State of Indiana that the handling of benzoate of soda, except tomato catsup, was prohibited by laws and rules of the State Board of Health for the year 1908, and that during the year 1907 the use of benzoate of soda was prohibited in all food products except tomato catsups and sweet pickles in bulk.

10. That said defendant, Barnard, in so advising said persons and dealers, acted in good faith in the bona fide belief that in so doing he was taking steps in the line of his duty in accordance with law, and his course of conduct was without any ill-will or malice to said complainants, or either of them, and without any intention on his part to injure or harm said complainants or their business within the State of Indiana, but with the bona fide belief that he was enforcing a valid and constitutional enactment of the General Assembly of the State of Indiana, and said defendant, Barnard, never at any time entered into any conspiracy of any

kind with any person or persons to intimidate complainants or their customers, or to ruin any part of their business.

11. Properly manufactured tomato catsup is made of the boiled pulp of whole, ripe, sound tomatoes, with added salt, sugar, vinegar and spices which have the effect of preservatives, or condimentals, or both. Prior to the last thirty years these condimentals and preservatives were the only kind of preservatives that were used for preserving the fruit juices, tomato catsups and pickles from fermenting or spoiling. Within the last thirty years the use of benzoate of soda as such preservative in the tomato catsup of commerce began, and thenceforward has continued to this date in different parts of the United States, and for the last twenty years or more, each of the complainants have used benzoate of soda or benzoic acid in the manufacture of tomato catsup and a few other products which they respectively have commercially prepared and put upon the market.

12. While there is a diversity of opinion among scientific men qualified to speak upon the subject, as to the harmfulness and harmlessness of benzoate of soda, when used in limited amount as a food preservative, and ingested by healthy persons ranging in age from 20 to 50 years, and this diversity of opinion varies between an absolute affirmative and an absolute negative, and is impossible of reconciliation under the testimony taken in this case does not establish as a fact that benzoate of soda when used as a food preservative and ingested by children, aged persons, invalids convalescents or persons suffering from chronic disease is harmless even when the quantity of soda so ingested does not exceed one-tenth of one per cent. It can not be said under the testimony in this case that it is yet established as a scientific fact that benzoate of soda used as a preservative in food products in amounts not exceeding one-tenth of one per cent. when ingested by persons in middle life and in normal health is harmless with respect to the health of such persons.

13. The use of benzoic acid and sodium benzoate in food products does not disguise or cover up the color, odor or taste of decomposed, putrid or rotten tomatoes or other food products, but benzoate of soda and benzoic acid are both preservatives, and as used by the complainants and other food manufacturers do delay or retard the growth of yeast, molds and bacteria. The complainants' products are made of the best selected raw material, and they do not contain putrid, rotten or decomposed material. It is impossible to prepare a tomato catsup from skins, cores. refuse, factory waste, and partially or wholly of rotten, putrid and decomposed tomatoes, and with the addition of sodium benzoate to keep this catsup after the same has been opened until it is consumed, and, by the addition of spices, sugar and vinegar the taste of this product will be covered up and concealed that it will be fairly palatable. It is also possible to prepare a tomato catsup made from decomposed and rotten material without the use of benzoate of soda, but with salt, vinegar, sugar and spices, so that the same may be consumed after the package is opened, and it will be a fairly palatable catsup. Benzoate of soda is frequently used by manufacturers other than the complainants in the preparation of catsup made from rotten, decomposed and putrid tomatoes.

14. The body of the tomato is composed of what are called rotten pectins. These pectins are present in large quantities in the pulp of the

tomato, and in small quantities in the skins, cores and peelings. In order to prepare a catsup commercially without the use of benzoate of soda, there must be a heavier body to the catsup, and in order to obtain this body the skins and refuse, if used, must be run through a sieve; and this process makes it impracticable from a financial standpoint to prepare, without the use of benzoate of soda, such a catsup from putrid, rotten and decomposed tomatoes, or from factory waste, skins, cores and peelings. Where factory waste, refuse, cores, skins and peelings of rotten and decomposed tomatoes are used in the preparation of tomato catsup, not being run through a sieve, they produce a thin, watery catsup, and such catsup can not be prepared so that it will keep after opening without the use of benzoate of soda, benzoic acid or similar preservative. The use of benzoate of soda in such catsup delays and retards fermentation, and such non-fermenting products are calculated to deceive the public as to the actual ingredients of which the product is made, and to cause the public to believe that the product is made of pulp of fruit instead of cores, skins and peelings.

15. There is no scientific or financial reason for the use of benzoate of soda or benzoic acid in pickles, jams, jellies or fruit butters, and each and all of said products can be prepared without the use of benzoate of soda or benzoic acid and kept after opening until consumed without spoilage or loss from fermentation. Said pickles, jams, jellies and fruit butters can be so prepared and kept after opening until consumed without the addition of any other ingredient and without the change in quality of the ingredients that are used in said products when benzoate of soda is also used and without the addition of anything that is not essential to the manufacture of said products.

16. In the sense and to the degree stated in the foregoing findings, benzoate of soda when used in food products of inferior quality is approximately efficient in concealing the inferiority of such food products.

17. Neither of the complainants has ever sold, shipped or used in any way skins, cores or peelings, or inferior or rotten fruit, and in so far as either of the complainants has used sodium benzoate, it has not at any time so used sodium benzoate directly or indirectly for the purpose of preserving or concealing fruit products containing skins, cores or peelings, or inferior or rotten fruit.

18. The natural fruit flavor of the catsups of each of the complainants makes these goods popular with the purchasing public, and this popularity is a valuable financial element in the good-will of each of the complainants in its manufactured catsups. Each of the complainants states the fact to be that this natural fruit flavor can not be obtained by it in its manufactured catsups without the use of sodium benzoate or some other tasteless preservative. Competitors of the complainants claim that they can and do obtain and keep the natural fruit flavor of their manufactured catsups without the use of benzoate of soda or other tasteless preservative. The testimony does not show, as a scientific fact, the basis of the claim of the complainants that they can not obtain and keep the natural fruit flavor of manufactured catsups without the use of benzoate of soda or some other tasteless preservative. The testimony does not show that manufacturers of catsups who ceased the used of sodium benzoate, after

they had so ceased increased the sugar and vinegar content of their catsup.

19. Each of the complainants in its manufacture of catsup used vinegar which, expressed as acetic acid, ran from sixteen one hundredths of one per cent. to three-tenths of one per cent. This quantity of vinegar, without an added preservative, would make a total average acidity of about eighty-five hundredths of one per cent. of their catsup, and this average acidity is insufficient to keep such catsup from spoiling after it has been opened and exposed to the air without such additional preservative.

20. Until a recent date the method of ascertaining the sodium benzoate contained in food products was not approximately exact, and the delicacy of the process made it very difficult practically to ascertain the sodium benzoate content with reasonable accuracy. Each of the complainants labeled its catsups as containing one-tenth of one per cent. of sodium benzoate, and each of the complainants in so labeling its catsups acted in good faith, believing that such statement was truthful.

Upon the foregoing findings of fact, said Master makes and states the following:

CONCLUSIONS OF LAW.

I.

Inasmuch as it is stated in the above findings of fact, in effect, that it is a fact that benzoate of soda when used in foods, in limited quantity, is so used as a preservative substance, and that it is not an accepted fact in the scientific world that benzoate of soda, even in limited quantities and when ingested in the foods of human beings, is harmless, the State of Indiana has the power to enact a law forbidding the use in any quantity of benzoate of soda in food products, even though the State of Indiana in such legislation by express language permits the use in food products of other harmless added ingredients.

II.

The Act of the General Assembly of the State of Indiana approved March 4, 1907, being Chapter 104 of the Acts of 1907, entitled "An Act forbidding the manufacture, sale or offering for sale of any adulterated or misbranded foods or drugs, defining foods and drugs, stating wherein adulteration and misbranding of foods and drugs consist, and defining the duties of the State Board of Health in relation to food and drugs, their inspection, purity and misbranding, regulating the slaughter of animals and their preparation for food, providing an appropriation for enforcement, providing for the appointment of a State food and drug commissioner, declaring penalties for the violation of the laws, rules and ordinances concerning food and drugs, repealing acts in conflict therewith, and declaring an emergency,"

(a) is not, nor is either of its sections, violative of any provision of the Constitution of the State of Indiana;

(b) the said Act is not, nor is either of its sections, violative of any provision of the Constitution of the United States or its amendments;

(c) but the said act is, in all of its parts, constitutional under both the State and National Constitutions.

III.

The equities of the case are not with the complainants, or either of them, and the bill should be dismissed at complainants' costs.

Respectfully submitted,

EDWARD DANIELS,
Master in Chancery.

The complainants took some sixty-seven exceptions to the master's report. These exceptions were argued in Judge Anderson's court, but were not sustained by him, and a finding was returned in favor of the defense on every point at issue. The case has been appealed to the United States Circuit Court of Appeals.

AN ESTIMATION OF THE DAILY SOOT DEPOSIT IN INDIANAPOLIS.

H. E. Barnard and William D. M'Abee.

Of the many arguments favoring the abatement of the smoke nuisance, the most effective is that showing the economical waste due to the non-utilization of a considerable quantity of the fuel shoveled into the grate. To the sanitarian there are other more weighty arguments. The continual inhalation of air befouled with ash and carbon cannot but produce definite results upon the respiratory organs that are certainly not beneficial and in all probability favorable to pathological change. This injury can not be definitely established in terms of dollars and cents.

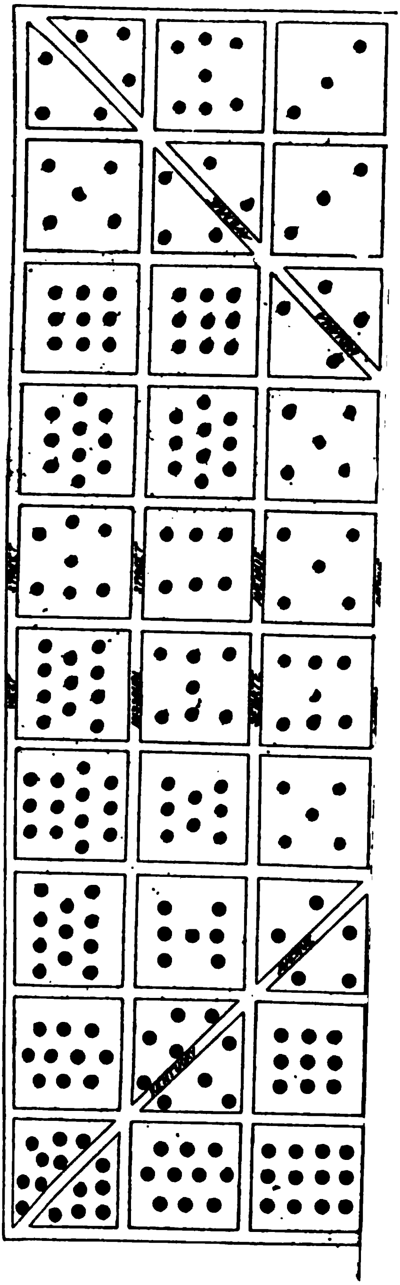
The soot and dust nuisance is directly and indirectly expensive because of the damage done to various materials. Soots deposits make house painting and finishing necessary far more frequently than if the air were clean; the cleansing of draperies becomes necessary at frequent intervals, and all laundry bills are increased greatly because of the condition of the atmosphere of the average manufacturing city.

Indianapolis is not different from other cities in this respect. Because of the fact that large quantities of soft coal are consumed and the city ordinances regulating the smoke nuisance are not effectively enforced, it is perhaps less clean than even larger cities where hard coal containing less volatile matter is used, or where fuel combustion is more carefully regulated.

In order to determine if possible the amount of soot deposited daily under ordinary working conditions, advantage was taken of a snow fall in the month of March to collect samples of snow which were later analyzed for their organic and mineral content. The snow fall which began at 10 p. m. March 2d and continued until 12 m. March 3d was followed by very cloudy weather. The record of the U. S. weather Bureau shows the average velocity of the wind to have been about 9 miles an hour and the prevailing direction northeast. The samples of snow were taken on Monday, March 4th, between the hours of 12 m. and 3 p. m. The analytical results obtained show the deposit from the atmosphere during a period of twenty-four hours. Unfortunately, a large part of this time included Sunday afternoon and night when manufacturing operations were suspended and at a time while railroad traffic was much less than during a week day. For this reason the results obtained do not show conditions as bad as those of the average twenty-four hours.

The samples were taken at each street intersection within a radius of one-half mile from the center of the city and included that area known as the "mile square." Samples were also taken in residential parts of the city, at the city hospital, near Fall Creek and in Irvington. Each sample included a square foot of surface. The snow from this measured area was carefully scraped together and placed in a numbered bottle. The snow, with its burden of soot and ash was melted and the insoluble content determined by filtering through a tarred Gooch crucible. The results obtained are shown graphically on the accompanying chart. The black dots represent one pound of organic and mineral matter per acre per day. The average deposition during the twenty-four hours under examination was 10.28 pounds per day in the district included in the "mile square." Presuming a similar deposition during the three hundred and sixty-five days in a year, the total amount of coal and ash deposited on that territory is 1,200.7 tons per annum. As a matter of fact, the deposition is no doubt greater than this, for as before indicated the observation includes only a part of a day in which business operations were in motion.

An analysis of the material deposited showed a volatile carbon content of 17.2 per cent. and an ash content of 56.96 per cent. The British thermal units or calorimetric value of the deposited material was 3,944. As compared with an ordinary soft coal, the material was very low in fuel value, consisting largely of ash. The ash content is interesting in that it shows the presence in the atmosphere of very large quantities of coal ash or mineral matter, a condition which is not usually suspected. This dust content is un-



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doubtedly due to improper methods of stoking and the forced drafts that carry out of the flue the ash which properly should fall to the ash pit.

By far the largest quantity of soot and ash was found in the samples collected in the vicinity of the railroad tracks. For instance, the average deposition at Meridian street and the tracks was 47.07 pounds per acre per day as compared with the average for the entire district of 10.28. At Pennsylvania and the tracks the deposition was 26.72; at Alabama street and the tracks, 47.82; at New Jersey street and the tracks, 60.26; at East street and the tracks, 41.04. The northern boundaries of the "mile square" show a relatively low soot content. At North and West streets the deposition was 3.08 pounds per acre per day; at North street and Capitol avenue, 2.68; at North and Meridian, 1.50; at North and Pennsylvania, 2.54; at North and Delaware, 4.73; at North and New Jersey, 1.99; at North and East, 4.12.

Very low figures were obtained on samples collected at Ritter avenue and Washington street in Irvington where deposition of 0.85 pounds per acre was noted and at University and Audubon Road where the deposition was 0.96.

One of the worst conditions was in territory contiguous to the city hospital at Indiana and Athon streets where the deposition was 65.97 pounds per acre per day and at Hadley and Blake streets 70.89.

The residential territory north showed a low deposition. At Pennsylvania and Sixteenth streets the amount was 1.05; at Pennsylvania and Twenty-first streets, 1.58; at Alabama and Twenty-first streets, 0.94; at Central avenue and Twenty-first street, 1.50; at Park avenue and Sutherland avenue the deposition was 0.68; at College avenue and Fall Creek, 0.77.

These figures are interesting in showing the relatively small quantity of soot and ash deposited in the residential district where, although much soft coal is burned, the atmosphere is far less heavily laden than in the manufacturing or railroad districts.

An examination of the map plainly shows the concentration of the soot and the great influence upon the atmosphere of the engines operating trains into the Union Station and adjoining freight yards.

This map was made up by W. D. McAbee, of the staff of the State Board of Health, to show the relative cleanliness of various parts of the mile-square downtown. The black spots indicate soot deposits. The number to the square was estimated from actual calculations of the amounts of soot deposited on snow during fixed periods and over definite areas in the different parts of the downtown section. The snow and coal carbon over the areas tested were scraped together into receptacles and then the water was eliminated, showing how much dirt was deposited on that area. The section of the map representing the vicinity of the railroad tracks and the Union Station is seen to be the depository for the most grime.

REPORT

FROM THE

Water Laboratory

H. E. BARNARD, Ph. D.

THE WATER SUPPLY OF INDIANA.

John Ruskin, in the preface to his lectures gathered under the title "Crown of Wild Olive," has expressed in language as accurate as that of the best trained sanitarian, and far more beautifully than the engineer or chemist may hope to do, the blight polluted water casts over the community. He describes conditions in little villages in South England which are repeated in almost perfect facsimile in scores of communities in Indiana. He says of the villages of Beddington and Carshalton, and of their pools and streams:

"Twenty years ago —— no clearer or diviner waters ever sang with constant lips of the hand which 'giveth rain from heaven;' no pastures ever lightened in springtime with more passionate blossoming, no sweeter homes ever hallowed the heart of the passer-by with their pride of peaceful gladness—fain-hidden—yet full confessed. The place remains, or, until a few months ago, remained, nearly unchanged in its larger features; but, with deliberate mind I say that I have never seen anything so ghastly in its inner tragic meaning,—not in Pisan Maremma,—not by Campagna tomb,—not by the sand-isles of the Torcellan shore,—as the slow stealing of aspects of reckless, indolent, animal neglect, over the delicate sweetness of that English scene: nor is any blasphemy or impiety—any frantic saying or godless thought—more appalling to me, using the best power of judgment I have to discern its sense and scope, than the insolent defilings of those springs by the human herds that drink of them. Just where the welling of stainless water, trembling and pure, like a body of light, enters the pool of Carshalton, cutting itself a radiant channel down to the gravel, through warp of feathery weeds, all waving, which it traverses with its deep threads of clearness, like the chalcedony in moss-agate, starred here and there with white grenouillette; just in the very rush and murmur of the first spreading currents, the human wretches of the place cast their street and house foulness; heaps of dust and slime, and broken shreds of old metal, and rags of putrid clothes; they having neither energy to cart it away, nor decency enough to dig it into the ground, thus shed into the stream, to diffuse what venom of it will float and melt, far away, in all places where God meant those waters to bring joy and health. And, in a little pool, behind some houses farther in the village, where another spring arises, the shattered stones of the well, and of the little fretted channel which was long ago built and traced for it by gentler hands, lie scattered, each from each, under a ragged bank of mortar, and scoria, and bricklayers' refuse, on one side, which the clean water nevertheless chastises to purity; but it cannot conquer the dead earth beyond; and there, circled and coiled under festering scum, the stagnant edge of the pool effaces itself into a slope of black slime, the accumulation of indolent years.''

Will there not rise in Indiana a Ruskin who with brilliant metaphor and perfect simile will flay unsparingly our insolent and criminal acts in poisoning and defiling the flowing streams which should be our beauty spots, park-banked, burdened with pleasure craft, bordered by pleasant homes, by making them sewers for our cities' waste and dumps for refuse from street and factory?

In our State, a thousand miles from coast, and with lakes and ponds confined to a small portion of northern Indiana, an undefiled flowing stream is an asset of uncounted worth, not only because in the future it must be the water supply of the communities it passes, but because it is the only opportunity for our children to enjoy their natural heritage of leaf-shaded swimming pools, for the fisherman to cast his hook, and for everyone to go, the days' work over, by canoe or motor boat to camp and cottage underneath the trees.

The stream pollution law written in our statute books in 1907 stands in protest against further pollution of our waterways, but because of the desire of the legislators to give to each community the right to act under its provisions, the State Board of Health has been unable as yet to accomplish much, if anything, important in the way of stream purification.

The city of Indianapolis is making preparations to install a purification plant that will so treat its sewage that White River will return to its own again, and, as in years gone by, flow a stream of beauty and liquid music instead of as now, a black and ugly stench-burdened open sewer.

During the year ending September 30, 1912, 1,164 samples of water were analyzed; 618 samples were taken from shallow wells, that is, dug wells, or, if driven, not touching the water stream lying below an impervious layer; 59 samples were spring waters; 66 from flowing streams; 42 from ponds and lakes and 31 from cisterns. Sixteen samples were taken from miscellaneous sources, and were, for the most part, samples submitted by the State Fish and Game Commissioner. Of the total number of samples examined, 666 were classed as good, 309 as bad, and 189 as of doubtful quality.

Two hundred and seventeen samples were from public supplies. Sixty-six of these samples were taken from flowing streams, 42 from ponds and lakes, 17 from springs, 29 from shallow wells and 63 from deep wells. Of the shallow wells used as public supplies, 21 were in good condition, 3 were found to be polluted, and 5 were of doubtful quality. Fifty seven of the deep well samples were of good quality, 1 was bad and 6 were doubtful. Of the stream samples, 36 were reported as good, 10 were bad and 20 were doubtful. Ten of the 17 springs examined were pure, one was polluted and 6 were of doubtful quality. Of the samples from ponds, 26 were of good character, 6 were bad and 10 were doubtful.

An analysis of these figures shows, first, that the deep well supply is far more apt to be pure than any surface water, whether it be from ponds, streams or shallow wells. The stream supply is of the most questionable character, more than half as many samples being of doubtful quality as were undeniably good. Even the spring samples are only fair and frequently polluted or of doubtful quality. Indeed the supposed purity of the spring is more fiction than fact, and no spring supply should be assumed to be pure until careful chemical analysis has shown it to be unpolluted. Pond or lake waters are liable to pollution, and in many cases are of doubtful quality. Most stream waters and all pond supplies may be made pure and satisfactory for drinking and domestic purposes by proper treatment. Usually flowing stream waters carry such quantities of sediment during the rainy season of the year that they must be purified by sedimentation or filtration before being ethically fit for use. Pond waters, while usually free from sediment and great turbidity, frequently carry much dissolved organic matter in solution, which imparts a decided taste, odor and sometimes color to the water. It is difficult to make such a water clear and potable, but it is gratifying to know that a water, although not pleasant to look upon, may be wholly free from disease producing bacteria.

The large number of doubtful samples taken from sources of public water supply calls for constant careful supervision by public officials of all such supplies. It is not enough to assume that a given supply is potable. That fact must be proven by daily or weekly analysis, since all surface waters, whether the source be lake, pond, flowing stream or shallow well, are constantly subject to pollution; and even deep well waters, under extraordinary conditions, such as the sinking of gas or oil wells, may become contaminated by infiltrated sewage from overlying strata. As the State becomes more densely populated, increasing vigilance on the part of operators of water supplies and all other agents whose duty it is to protect the health of the people is essential if water borne diseases are to be lessened.

Nine hundred forty seven samples of water from private supplies were examined during the year. Five hundred eighty seven of these samples were taken from shallow wells, 271 from deep wells, 42 from springs and 31 from cisterns. But 254 of the shallow wells were good, 246, almost the same number were bad, and 87 were doubtful. Including the doubtful waters with those unquestionably bad, 60 per cent. of the shallow well waters are unsuitable for use. This figure is almost exactly the same as that reported each year during the seven years the water laboratory has been in operation. This constant factor, determined by the analyses of hundreds of samples from every part of the State, sent in under all sorts of conditions by health officers, tenants and land owners alike, brings us to the inevitable conclusion that the shallow well is an ever menacing danger. The number of shallow wells in the State is not reported, but without doubt more than 250,000 are in daily use. With more than half this number contaminated by the waste products of the home and modern industry, the health officer, whose duty it is to safeguard the health of his community, even to the extent of knowing the character of every well supply in his jurisdiction, is confronted by an enormous task, which must not, however, be neglected because of its magnitude.

One hundred forty-nine shallow well samples were suspected of causing typhoid fever. Sixty of those samples proved to be pure, 65 were bad and 24 doubtful. The ratio of good to bad in these suspected samples is a little lower than in shallow wells, as a whole, but the percentage of bad samples is not so greatly increased as to warrant the conclusion that typhoid fever is usually a water-borne disease.

Of the total number of 271 deep wells analyzed, 207 were good, 26 bad and 38 doubtful. The deep wells are far safer than the shallow wells, the percentage of bad and doubtful being as 20 to 60. In other words the family depending upon a deep well is three times as well protected against water-borne disease as the family using surface water. But 4 of the 24 deep wells suspected of having caused typhoid fever were polluted.

Of the 42 spring samples analyzed 26 were good, 5 were bad and 11 doubtful. This showing of 16 doubtful springs out of the small number examined throws serious doubt upon the boasted purity of the spring supply.

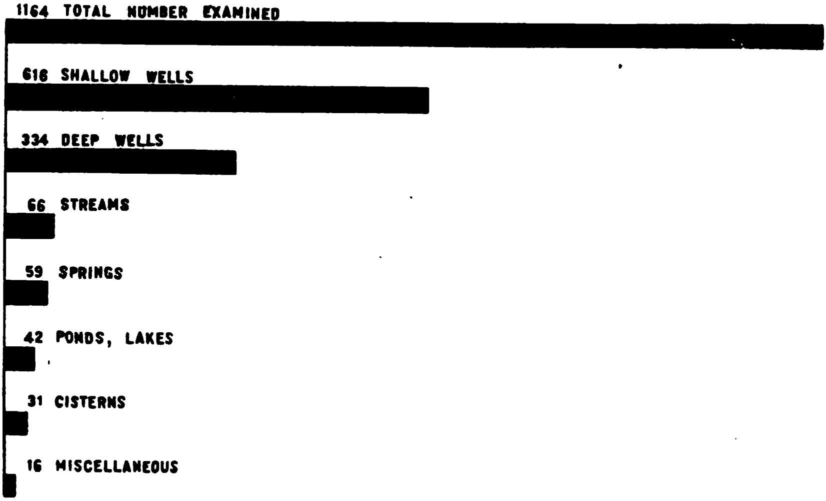
Of the 31 cistern samples analyzed, 22 were good, 6 were bad and 3 were doubtful. Cistern water, though usually filthy from washings from the roof and occasionally polluted by the inflow of surface water from the back yard, vault and kitchen wastes, if properly built should furnish potable water, soft and of not unpleasant flavor.

A special classification has been made of the samples sent in from school house yards. Nineteen of those samples were from shallow wells and 32 from deep wells. Sixteen of the shallow well samples were pure, 2 bad and one was doubtful. Twenty-six of the deep well samples were good, 2 were bad and 4 were doubtful. While the number of bad and doubtful waters is not large, the fact that any were found polluted is a sufficient reason why all waters furnished school children should be of known purity.

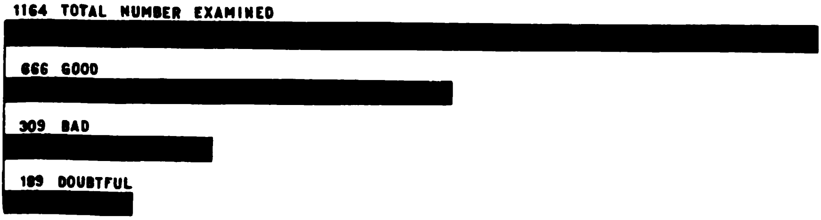
WATER SUPPLIES

INDIANA

1912



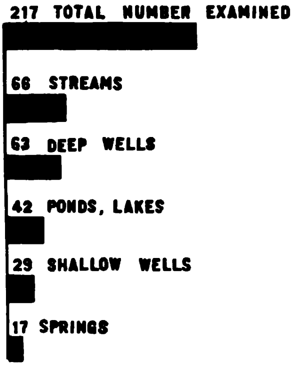
QUALITY OF SUPPLY



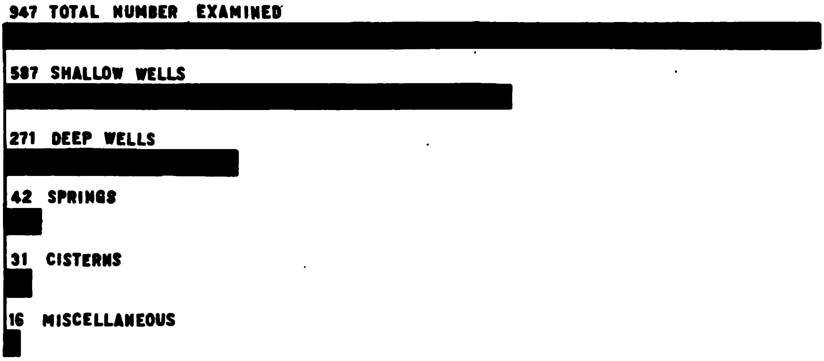
WATER SUPPLIES IN INDIANA

PUBLIC SUPPLIES

1912

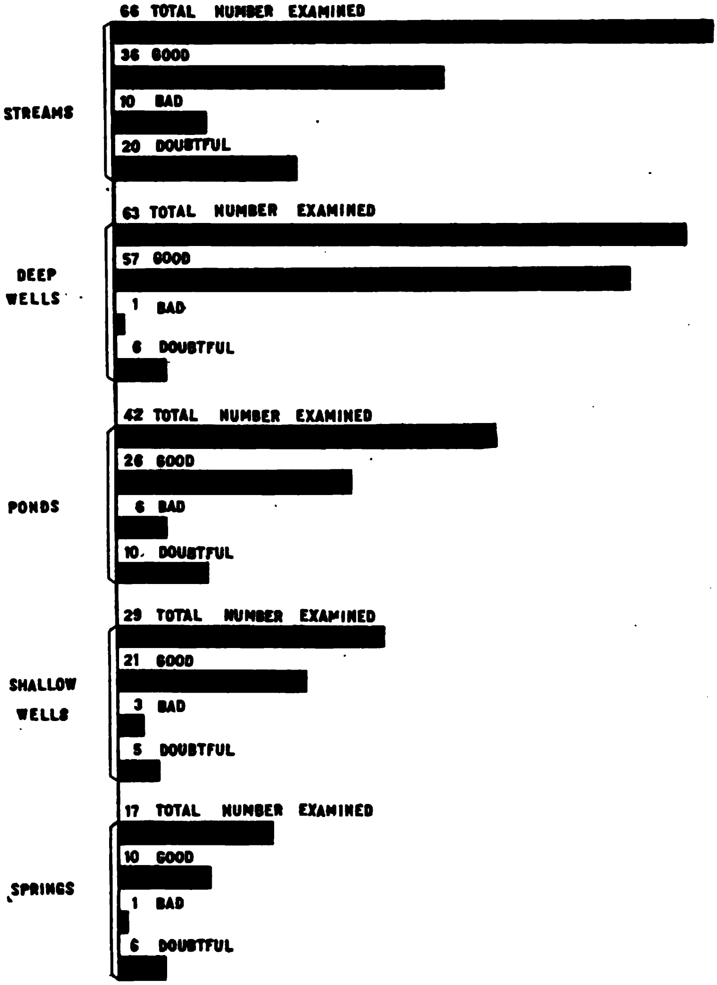


PRIVATE SUPPLIES



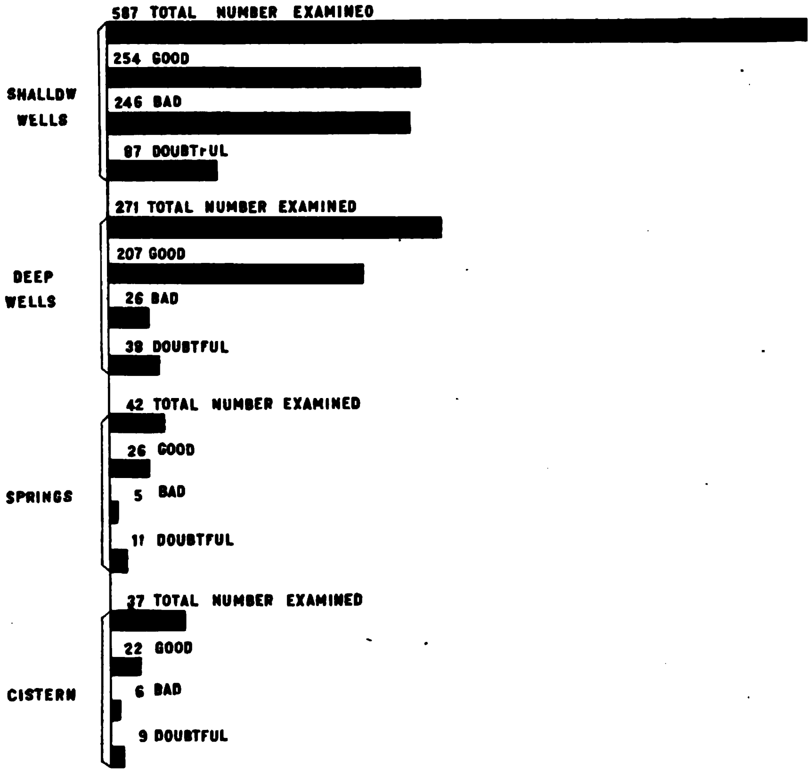
CONDITION OF PUBLIC WATER SUPPLIES IN INDIANA

1912



CONDITION OF PRIVATE WATER SUPPLIES IN INDIANA

1912



SPECIAL INVESTIGATIONS.

During the summer of 1912 a sanitary survey was made of the Wabash River from a point near its source in northeastern Indiana to its confluence with the Ohio at the extreme southwestern corner. of the State. The results of this survey are detailed at length elsewhere in this report.

During the year a number of studies have been made of the water supplies of different cities and towns. Following requests for assistance, these supplies have been investigated by the Department, and the results of the investigations as set forth in the reports here follow:

REPORT ON THE WATER SUPPLY AT PAOLI, INDIANA.

Made by JAY CRAVEN, October 11, 1911.

H. E. Barnard, Chemist, Indiana State Board of Health, Indianapolis. Ind:

DEAR SIR—Pursuant to instructions I have visited Paoli, Ind., and made a careful study of the water supply situation of that town.

I find that the present supply is taken from Lick Creek, a stream carrying a sufficient volume of water for all the needs of the town but subject, at times, to excessive turbidity and to possible danger of pollution by surface water from the watershed above the pumping station. The character of the water is not such as to adapt it for drinking and domestic purposes, although for fire protection, sprinkling and bath connections, the supply is adequate.

The water is taken from Lick Creek and pumped to a reservoir on a high hill above the town by two Dean pumps, one 12 x 7 x 10 inches with a capacity of eight thousand gallons per hour, and the other, 12 x 8 x 12 inches, with a capacity of twelve thousand gallons per hour. Pumping is usually done at night when the electric light power plant is in operation. The four-inch main leading from the station to the reservoir is rather small for its purpose. It is used both to pump water to the reservoir and to distribute water when the pumps are not working. The reservoir itself is in very good condition and has evidently been properly cared for. It is 52 x 80 x 5½ feet, with a capacity of 170,000 gallons.

A fence should be built around the reservoir to prevent small animals, snakes, etc., from getting into the water.

For some years the citizens of the town have felt the necessity for an improved water supply which should be free from turbidity and suitable for drinking and domestic purposes. This condition has been recently augmented by the establishment of a canning factory which utilizes large quantities of water in its operations and which must have a supply which is sanitarily unobjectionable.

The authorities have opened a well about three hundred feet from the present pumping station on the opposite side of Lick Creek and by crude methods of operation, a well about fifteen feet in diameter has been dug

down to rock ten feet below surface. Upon reaching gravel lying above lime stone formation, two small streams of water were reached, the combined flow of which barely fills a 1½-inch pipe. An analysis of the water which has been made under laboratory number 5115, shows it to be of excellent quality in every respect and possessing in addition the quality of being far softer than water in rock in the vicinity of Paoli, or indeed, of the water supply of most of the State.

In order to augment the flow of water in gravel some stone has been taken out of the bottom of the well, and on the 10th inst. a drill was set up for the purpose of penetrating the rock and if possible, finding an adequate supply in the gravel stratum supposed to lie below the rock. During the first day's operation of the drill a small flow of water was found, but the amount was inadequate for practical purposes. At the time of the inspection, the drilling of the well was being continued. In the event that the drill pierces the rock and finds water-bearing gravel in quantity, the problem of a pure supply for the town will have been economically solved. If, however, the gravel is not found, or if when found is dry, the only use to which the well can be put is to make of it a suction well for a pump in which water from other wells is collected in the manner hereafter described.

From a topographic survey of the area adjacent to the pumping station, it appears that Lick Creek, which describes a sharp bend one-fourth mile above the pumping station leaves on its right an area of many acres covered with sand and gravel. This area, so far as can be learned, is underlaid with gravel carrying a strong flow of water, the amount being dependent largely upon the varying depths of the gravel stratum. A pit dug at the upper end of this area reached the rock which forms the creek bottom and which underlies the entire valley at a depth of seven feet. The upper layers are of sand and the lower layers, gravel. It is apparent that the entire area partially surrounded by the creek is full of water and that the amount to be derived therefrom is dependent only upon the number of wells which may be sunk within the limits of the water-bearing sand and gravel deposit.

This water may be brought to the pumping station or the new well above referred to either by sinking a series of very shallow wells which go to the rock but which do not penetrate it, or by building an infiltration gallery along the bank of Lick Creek sufficiently removed from it to insure a complete and perfect filtration. The filtration galleries need not be open and indeed can be built most economically and readily by sinking a ditch along the line of the creek to rock and laying an ordinary drain tile one foot in diameter at such a pitch that it will collect all the water in the gravel through which it passes and deliver it to the pump well.

If a series of wells, all operated by one pump, is considered to be preferable, a similar adequate supply may be obtained at a cost limited almost entirely to the necessary pipe lines, as the wells necessary can be driven in the shallow sand and gravel bed in a short time.

It is recommended that a number of shallow wells be driven in the neighborhood of the well now being sunk and sufficiently far apart so that each may be independent of the other and tap a different area of water-bearing gravel. Since at the present time nothing is known of the capacity of these wells, it is most essential that as soon as the first well is down, it be given a complete test of its capacity. This can only be done by measuring the water continually for at least forty-eight hours. With this data in hand, it may be possible to approximate the number of wells required. Without this data, any money spent for this purpose is liable to be wasted. An ample supply of water lies in close proximity to the pumping station. It only remains for the proper means to be utilized for bringing it to the pumping well and thereby to give Paoli a potable water in sufficient quantities for all present and future needs both for domestic and manufacturing purposes.

Indiana State Board of Health, Indianapolis, Ind.:

GENTLEMEN—I report herewith the investigation of the pollution of the Muscatatuck River at North Vernon, Ind. J. A. Cravens, Water Chemist of the Laboratory of Hygiene of the State Board of Health, visited Vernon on October 26, 1911, and made a sanitary survey of the river between the town of Vernon and the city of North Vernon.

MUSCATATUCK RIVER POLLUTION.

Vernon vs. North Vernon.

Mr. H. E. Barnard, Chemist, State Board of Health, Indianapolis, Ind.:

SIR—The following complaint was received by the State Board of Health in September, 1911:

POLLUTION OF MUSCATATUCK CREEK IN RIPLEY COUNTY, BY THE CITY OF NORTH VERNON.

STATE OF INDIANA. BEFORE THE STATE BOARD OF HEALTH.

The Town of Vernon vs. The City of North Vernon.

The plaintiff, by its common council, complains of the defendant and says:

That the plaintiff from the day of........, 1895, has and still maintains a system of public water works, to supply water to its inhabitants for domestic use and for other purposes, and secures said water from the north fork of the Muscatatuck River or Creek. That said defendant permits to be discharged from its sewer into said Muscatatuck stream, wastes, befouling and deleterious matter, thereby materially injuring, for domestic use, the character of the water into which the same is discharged, to the injury of public health and comfort and is polluting the source of the plaintiff's water supply.

That said Muscatatuck stream is a natural watercourse, running along and across and within plaintiff's incorporation line for a distance of about three miles, and that plaintiff has use of said stream for supplying its water works system and for other purposes.

Plaintiff says that said defendant corporation owns and operates, and for about seven years last past owned and operated a sewerage system that leads and empties its wastes into said Muscatatuck stream, about two miles above the source of supply of the said plaintiff's or Vernon water works system. That said plaintiff has secured its water from said source for several years prior to the time when said defendant first operated its said mentioned sewage system and permitted it to flow into said stream above the source of plaintiff's said water supply.

Plaintiff further avers that said defendant unlawfully and injuriously has caused, suffered and permitted, and still continues to cause, suffer and permit, the offal, filth and noisome substances of said sewerage to be collected and mingled with the water of said stream Muscatatuck, to flow into and to be deposited in and about and to be and remain in said stream; and cause the same to flow in said stream, thereby forming a noxious, noisome and offensive deposit near to and about the entrance of said sewerage discharges into said stream, and downward therefrom along the course of said stream for a distance of about five miles and more, whereby that by reason of which the water of said stream becomes and is polluted and rendered noxious, and impure; poisonous, offensive; at times discolored and stinking, and unwholesome and unhealthy to the plaintiff, its inhabitants and its citizens. That

by reason of said pollution the said water is rendered unfit for use by this plaintiff, its inhabitants and citizens, and to their great injury and to the great injury and damage and depreciation in valuation of the real and personal property within said plaintiff's corporation; that said noxious, noisome and offensive deposits are impure, noxious, along said plaintiff's corporation line, and into the source of plaintiff's said water supply; that such deposits are the same impure, offensive, stinking said stream and bed and banks thereof, as aforesaid, to the great injury and damage and depreciation in value of property abutting said stream, and rendering the water in said stream on and within said plaintiff's incorporation line, unfit for use for man and beast.

That said water in said stream or when same is sprinkled upon the streets of said plaintiff corporation or elsewhere, renders the atmosphere in the immediate vicinity impure, noxious, offensive, poisonous, unhealthy and unwholesome, thereby affecting the health of the citizens and inhabitants of said plaintiff town of Vernon.

Wherefore, plaintiff by its common council sues and asks that said defendant corporation be perpetually enjoined from doing and performing the acts herein sent out, and for all other proper relief and that said injurious conditions be abated.

John R. Canby, City Attorney.
Wm. F. Welker, Mayor.
D. N. Haydon,
John Curtis,
Henry W. Hengstley,
Members of the Common Council of the Town of Vernon.

Additional:

C. C. Jordan,
Secretary Board of Health of Town of Vernon.

Acting on instructions, I investigated the portion of the river between Vernon and North Vernon, on October 26, 1911, in company with Dr. C. C. Jordan, Secretary of the Vernon Board of Health.

North Vernon, with a population of 3,000, has at present 6,500 feet of sewers, and it is proposed to lay 7,500 feet more, some of which is already in process of construction. All the sewers flow to one outlet, which is on a tract of land owned by Harriet H. Babb, but a few blocks from the center of the city. At this point by means of two manholes, connection is made to a natural underground tunnel which conducts the sewage about three-eighths miles to the point where it empties into the river. The accompanying map shows the general location.

About one and one-half miles above this point North Vernon has a dam which forms a reservoir and storage for its water supply. The pumping station, located at the dam, has two Gordon pumps of 1,500,000 and 2,000,000 gallons capacity, respectively. On a hill near the station there is a steel tower reservoir of 600,000 gallons capacity. Besides supplying the city, the three railroads which pass through it get all their water from this source. No records are kept of the daily pumpage and it was difficult to get at the daily consumption. From the data available the city uses on an average of 100 gallons per capita per day.

The Vernon pumping station is about two miles below the sewer outfall. Two Dean pumps of 72,000 gallons capacity each, pump the water to a steel standpipe of 32,000 gallons capacity. It is located on Peabody Hill and has an elevation of about 75 feet above the station. Vernon, with a population of 500, uses about 20,000 gallons per day. There are about 95 taps in town, but few people use the water for domestic purposes, nearly all of it is being used for sprinkling and watering stock. In 1911 there were two cases of typhoid fever, with one death.

There were several heavy rains during the two months previous to my visit, and more rain is said to have fallen during the months of September and October, 1911, than in a similar period for thirty years. The river was not quite down to normal, but it was clear and at no point showed any visible signs of pollution. At the present stage of water, the sewage of North Vernon, estimated at about 300,000 gallons, can be disposed of in the river by dilution.

The accompanying analysis shows the water at the Vernon pumping station to be practically the same in composition as that at the North Vernon station, both of them from a chemical standpoint being of good quality for drinking purposes. The sample taken 250 feet below the mouth of the sewer shows slight traces of the sewage coming in above it.

During a dry season, as last summer, the situation would be altogether different. With very little water in the river, pools would form and stagnate all along the course between the two places. I was told by the engineer at the North Vernon station that the reservoir above the dam had been pumped dry a few times and they were forced to go below the dam with traction engines to get their supply of water. In a case of this kind it is easy to see how sewage, possibly not as large a volume, under the circumstances, as the 300,000 gallons daily, could render the Vernon water supply unfit for use and become a nuisance to the people living along the river. Not seeing the river under these conditions I obtained a few statements from the leading men of Vernon.

W. M. Nauer, druggist and former Mayor, says: "The water in summer time in the soda water sink is so foul that the odor arising from it is very strong at night because the room is warmer on account of the lamps. It is not used in the fountain except for washing."

F. T. Seman, miller, says: "The water is offensive, the odor in the bath tub and sink is noticeable and it is not fit for use."

P. C. Willman (owner of sand bed along bank), says: "After every wash from rains it smells so from the filth deposited that a person can hardly stand it. Water was so bad that horses would not drink it in the summer."

Richard Kelley (lives on river bank at point where sewage empties), says: "On a warm evening the smell would about knock a man down. In summer when the water is low it makes all the water black."

Dr. C. C. Jordan, Secretary of Vernon Board of Health, says: "The condition of the Muscatatuck River at this time is excellent. For two months we have had an excessive amount of rain and high water, flushing out the river completely. During the summer months my attention has been constantly called to the condition of the water, and it was no trouble for anyone to detect the foul odor at the different hydrants in our town. My attention was called to the gravel hauled from the river bed and placed on our streets. Said gravel was very foul, emitting a bad odor. I want to further state we have had two cases of typhoid fever, one of which proved fatal. The patient who died was Professor L. E. Huck, County Superintendent, and Mrs. J. W. Segman, who recovered, lives along the river across the corporation line."

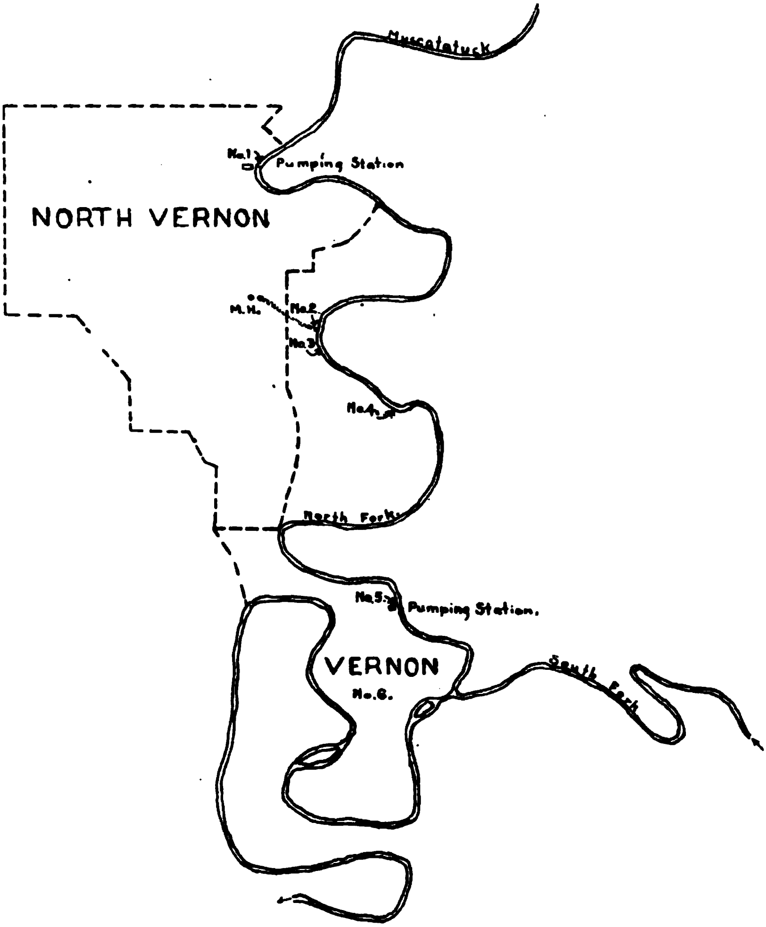
Dr. D. H. Hayden, druggist, says: "Condition now are very much better than during the summer months when the river was low, owing to the recent floods, which were very unusual for this time of the year. More rain fell this September and October than for thirty years. We can only use the water for fire protection, sprinkling and watering stock. It stinks bad in summer and the stock refuse to drink it."

It is very evident that the condition of the Muscatatuck River at the time when Mr. Craven made the investigation was quite different from that observed by residents of Vernon during the summer months, and it is unfortunate that for the purpose of studying the condition of the river, the investigation was made at a time when the flow of the stream was above normal. Mr. Craven in one paragraph makes the statement, "from a chemical standpoint the water at the Vernon pumping station is the same in composition as at the North Vernon station, both of them being of good quality for drinking purposes." This statement does not in my opinion express the true condition of the river water at Vernon. River water receiving sewage to the extent of 300,000 gallons per day, but two miles from the source of the public water supply, is unquestionably of doubtful quality at all times, even though the dilution of the sewage is so great that its presence can not be detected by chemical analysis, and bacterial examinations show no pronounced increase in the bacterial content. The condition observed and reported must be taken as unusual and extraordinary and not in any way as representative of the character of the water under conditions of the normal flow.

I do not think the report is sufficiently conclusive to warrant any action by the State Board of Health at this time, and I suggest that a bacterial investigation of the water supply be ordered by your honorable board. Such an investigation, extending from a period of ten to twenty days, should determine far better than the report herewith enclosed, the actual character of the water and establish beyond reasonable doubt the effect upon the supply of the inflow of the sewage of the city of North Vernon.

Respectfully submitted,

H. E. BARNARD,
Chemist, Indiana State Board of Health.



Map
of
Vernon and North Vernon
Jennings Co. Indiana.

ANALYSIS OF WATER ALONG THE MUSCATATUCK RIVER, VERNON AND NORTH VERNON, INDIANA.

Results in parts per 100,000.

Source.	1.	2.	3.	4.	5.	6.
Ammonia free	.0020	.1760	.0240	.0100	.0060	.0040
Ammonia albuminoid	.0050	.0180	.0160	.0040	.0040	.0060
Nitrites	.0002	.0500	.0016	.0001	.0001	.0001
Nitrates	.0000	.0500	.0300	.0300	.0300	.0300
Chlorine	.6	3.5	.8	.7	.8	.8
Iron	.00	.02	.00	.00	.00	.00
Oxygen consumed	.12	.37	.19	.12	.12	.10
Dissolved oxygen	.803	.465	.792	.867	.798	.837
Alkalinity	18.4	22.0	19.6	19.2	19.6	24.8
Total solids	38.4	30.0	35.8	27.4	28.4	26.6
Fixed solids	34.0	25.4	28.6	22.2	20.6	18.8
Loss on ignition	4.4	4.6	7.2	5.2	7.8	7.8
Odor	Veg.	Decayed wood.	Veg.	Gas.	Gas.	Gas.
Sediment	None.	Dark brown.	None.	None.	None.	None.
Turbidity	Slt.	Slt.	Slt.	Slt.	Much.	Slt.
Color	4.	16.	2	2	9	4
Coli	Negative.	Gas.	Negative.	Negative.	Negative.	Gas.

Source:—

No. 1. Intake, Pumping Station, North Vernon.
No. 2. Mouth of Natural Sewer at Creek.
No. 3. In Creek 250 Feet below Mouth of Sewer.
No. 4. In Creek ½ Mile below Mouth of Sewer, Wm. Ream's Farm.
No. 5. Intake, Pumping Station, Vernon.
No. 6. Vernon Tap, C. C. Jordan's Residence.

February 13, 1912.

State Board of Health, Indianapolis, Ind.:

Gentlemen—I enclose herewith the report made by Mr. Craven on the feasibility of the extension of the sewerage system of Danville, Ind. It is Mr. Craven's opinion, in which I concur, that the town of Danville is not justified in installing a double system of sewerage with two sewage disposal plants. The fact that the town is situated on the crest of a hill over which areas to be drained slope in either direction, makes the problem far more difficult than would otherwise be the case. It is our belief, however, that the town should better consider the proposition of cutting down the grade and installing one sewage disposal plant below the water works. It is further suggested that for the present purposes of the town only a portion of this system, which will care for the sewage of the county property, need be built.

Yours respectfully,

H. E. BARNARD,
Chemist.

H. E. Barnard, Chemist, State Board of Health, Indianapolis, Ind.:

Dear Sir—Acting on instructions, on January 30, 1912, I visited Danville, Hendricks County, Ind., and made an investigation of the sewer constructed by the county commissioners in 1909.

The sewer was built for the purpose of caring for the sewage from the court house and the county jail, but no objection was made by the county commissioners to other individuals and corporations tapping the sewer. At the present time there are eighteen connections to the sewer, which has a length of 4,600 feet. When it was built no attempt was made to fix grades so that it could be used as part of a general system in the future.

A sanitary system has been designed for the town, and plans drawn for the same. These plans call for two outlets, independent of the present one. One of the outlets is to empty into the White Lick Creek north of the town and the other below the town. Inasmuch as the water supply of the town is drawn from wells about 260 feet in depth, located near the creek, below the proposed upper outlet, it is advisable so to change the plans that all the sewage will be conveyed to one point below the source of the water supply. The supply is, no doubt, fed to some extent by the creek, and any possible sources of contamination should be considered and eliminated.

The proposed changes in the plans necessitate a deep and expensive cut. If the original plans are followed the two proposed outlets will require two treating plants. It is roughly estimated that the first cost and the upkeep of an extra plant would not be far from the cost of the extra excavation necessary.

The question of installing an adequate treating plant to care for the effluent of the present sewer should not be considered. The expense in connection with it, considering the number of people served, would not warrant it. It would be too costly for a temporary relief and the plant could not be used in connection with a general system.

Therefore, it is recommended that the present plans be changed so one outlet will serve the town. Although impossible to construct the whole system at one time, it is recommended that a part of it, sufficient to care for the sewage from the county jail and court house and the remaining services connected to the present sewer, be built at this time. In this way a permanent system and treating plant will be established, which can be added to as conditions warrant and by means of which the whole town will be served.

JAY CRAVEN, C. E.

H. E. Barnard, Chemist, State Board of Health:

Dear Sir—At the request of Dr. F. R. Warren, of Michigan City, Ind., I went there February 20, 1912, to investigate the quality of ice being cut inside the breakwater at the points indicated on the accompanying map, and also the conditions and surrounding of the field from which the ice was being harvested.

The sewage of the city, including that of the State Prison, a total population of 21,000, empties into the harbor. Trail Creek supplies some water to the harbor, but not sufficient to materially dilute the water or to flush the harbor. A stick or float will stay for days in the harbor without shifting its position to any extent. The harbor is a large sedimentation basin, very foul, indeed, during the summer months.

The lake currents vary in direction. At times the current through the opening indicated in position and direction by the arrow on the map is so strong that it is difficult to go through with a row boat, against it.

The area enclosed and from which the ice was taken acts as an additional sedimentation basin, although the dilution is much greater than in the harbor proper.

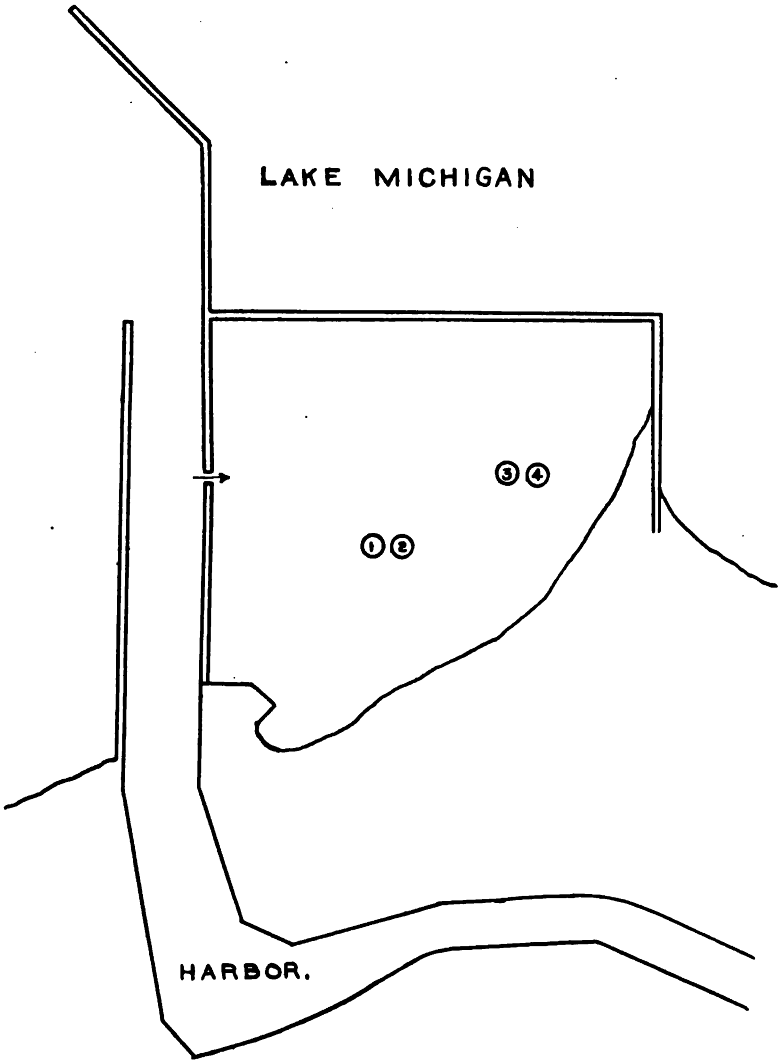
Samples 1 and 2 and 3 and 4 were taken at points indicated on the map. Samples 1 and 3 were collected directly from the water at those points and 2 and 4 were ice samples.

No.	Source.	Bacteria Per cc.	Presumptive 0.1 cc.	Coli 1.0 cc.
1	Water	105,000	+	+
2	Ice	9,500	—	+
3	Water	84,000	+	—
4	Ice	5,400	—	—

Although the water shows greater pollution than the ice samples, the bacteria counts on the ice are much too high, and in the case of sample No. 2, coli are present. The use of the ice for other than cooling purposes is to be condemned as an unsafe practice. If the ice is sold, it will be difficult to control its disposal and the practice of selling this ice, although sold with the understanding that it is to be used for cooling purposes only, is unwarranted, and should also be condemned.

Yours very truly,

JAY CRAVEN, C. E.



HARBOR AT MICHIGAN CITY
SHOWING SAMPLING POINTS.

THE MICHIGAN CITY WATER SUPPLY AND STEPS TAKEN TO IMPROVE ITS QUALITY.

J. A. CRAVEN, C. E.

The so-called typhoid fever and other enteric disease conditions that have been observed at Michigan City for many years prevailed again in the winter of 1912 in a type, if anything, a little more severe than in other years.

The local Board of Health, recognizing the danger encountered each year as one which could be prevented if the proper precautions were taken, called a joint meeting of the Medical Association and taxpayers to discuss the problem. I was requested to be present at the meeting, which was held on February 27, 1912. At this meeting the following facts were presented:

Since January 1, 1912, to the date of this meeting, 46 cases of typhoid fever have been reported, the majority of them during the last two weeks of February. Besides the typhoid fever there have been a large number of cases of sickness due to other enteric diseases. That most of the sickness is caused by the public water supply drawn from Lake Michigan there is no doubt, as the following analyses made during January and February show that the water is polluted and unfit for drinking purposes except after boiling.

Positive B. Coli were present in the five samples collected in 1912. The chlorine content in the February samples is almost doubled over that in the January samples, and the January samples show twice as much chlorine as the samples taken during June and July of the previous year. Although the nitrites are not present in large amounts, yet the late analyses show practically double the usual factor. The ammonias are also high. All these factors show that pollution has increased in the past few months.

In seeking an explanation for this fact we must first review the work done by the State Board of Health in 1908, when a thorough survey of the water problem was made. The water supply is brought in from the lake through two intakes, the old, located 3,732 feet from the shore and 3,700 feet from the mouth of the harbor; the new, 4,300 feet from shore and 600 feet from the old intake. The intakes are located in 40 feet of water. Formerly, when ice clogged the old intake, it was necessary to clean it out with water drawn from the grossly polluted harbor. Following the use of the harbor intake, the epidemics of typhoid fever and other enteric troubles occurred. The harbor intake is no longer used since the new lake intake has been built, as either of the lake intakes can be used while the other is being flushed out.

All the sewage and trade wastes of the city and prison, with a population of 21,000, reaches the lake by way of Trail Creek and the harbor. On reaching the lake, it is greatly dilute. The impression has long existed that the prevailing currents are from west to east, but this idea has been pronounced a fallacy by W. V. Judson, Major Corps of Engineers of the War Department. who has found no positive Lake Michigan currents, and concludes that they run in any direction as influenced by the wind.[1] And by the critical study of the composition of the water of the southern end of Lake Michigan made by H. E. Barnard and J. H. Brewster in 1908,[2] it is found that the bacterial composition of the water varied widely from day to day, depending on the direction and force of the wind. Fishermen claim, however, that most of the drift and waste that catch in their nets is on the west side, indicating a current from west to east. During certain periods of the year the varying currents assist in the dilution of the sewage to such an extent that aided by sunlight, sedimentation and the natural death of the pathogenic germs the water supply from the lake has frequently been pronounced good. The tests made during the survey of 1908 showed a very satisfactory water for domestic and drinking purposes.

But different conditions exist at the present. Since the last of December the lake has been covered with a layer of ice and the wind cannot create currents to assist in the dilution, nor can the sunlight exercise any beneficial aid. Sedimentation is no doubt going on, but there it a limit to the purification possible by this single agency, and we therefore find the area of pollution extending farther out into the lake each day. The organisms which formerly died in pure water for lack of food, are enabled to live longer, and when we find samples of water taken from the intake containing B. coli, it is safe and reasonable to believe that this polluted area has extended that far out into the lake. When we find also chlorine, a soluble salt and a factor not affected by sedimentation, in quantities 3½ times as great as during the summer period, we must again be convinced that the area around the intake is being polluted by sewage. The total solids are over twice as high at this period as compared with the summer period shown in the accompanying table, with a loss of solids on ignition of 31.9% now as against 16.1% in the summer. The free ammonia is seven times as high and nitrites two times as high in the winter period.

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[1] First Rept. of the L. Mich. Water Com., page 63.

[2] Indiana St. Bd. of H. Rept. for 1908, page 448.

WATER SAMPLES FROM MICHIGAN CITY.

Laboratory No.	Date of Collection.	Odor.	Color.	Turbidity	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	Remarks.
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
4700	6-19-11	Sl. Veg.	None.	None.	Slight.	.0020	.0050	.0000	.0000	.4	14.6	12.0	12.0	.00	Tap. Coli —
4701	6-19-11	Sl. Veg.	None.	None.	V. slight.	.0030	.0030	.0000	.0000	.4	14.2	11.6	11.4	.00	Tap. Coli —
4780	7-12-11	None.	4	None.	Slight.	.0010	.0080	.0000	.0001	.4	15.8	14.0	11.4	.02	City supply. Coli —
5239	10-19-11	None.	None.	None.	None.	.0010	.0120	.0000	.0001	.6	34.8	30.8	12.4	.00	Tap. Coli —
5472	1-25-12	Dec. Earthy.	None.	None.	None.	.0060	.0080	.0000	.0001	.8	14.2	11.8	10.4	.00	Tap. Coli +
5473	1-25-12	Dec. Earthy.	None.	None.	None.	.0140	.0040	.0000	.0002	.8	33.0	29.4	12.2	.00	City main. Coli +
5499	2-20-12	Dec. Musty.	4	None.	None.	.0140	.0000	.0000	.0002	1.4	32.6	21.2	14.0	.00	New intake water works. B. Coli +
5500	2-20-12	Dec. Musty.	4	None.	None.	.0150	.0060	.0000	.0002	1.4	30.4	20.1	15.0	.00	City main. Coli +
5502	2-20-12	Dec. Musty.	8	Dec.	Slt. Br. Sed.	.0130	.0120	.0000	.0002	1.4	30.8	21.1	14.0	.02	Old intake water works. Coli +
5751	5-16-12	Musty.	6	Slt.	Slt. white sand.	.0070	.0110	.0000	.0002	.8	24.0	18.6	10.0	.00	Old intake. Coli +
5762	5-20-12	Musty.	6	Dec.	Slt. white sand.	.0070	.0110	.0300	.0001	.8	21.2	17.4	10.2	.00	City Tap. Coli —

It is also a significant fact that several cases of typhoid occurred among children attending the public schools who used well water at home and the public supply at the schools. In the families where these cases occurred, it was only the children who drank the lake water who were taken sick, no other members of the family being affected. All the cases that could be traced by the doctor were attributed to the lake water.

Since it was evident that the water supply is responsible for the typhoid, I recommended the installation of a hypochorite of lime treating plant. By applying this chemical solution in minute quantities, practically all bacteria can be removed. It has been found by experience that B. coli are especially susceptible to this treatment, and when occurring continually in the untreated water are entirely eliminated after treatment. The cost of its installation was estimated at $1,675. A low estimate of the money expended by people afflicted during this epidemic, including doctor bills, drugs, loss ow working time, etc., has been placed at $3,800. This amount would have easily paid for two treating plants like those required.

To avoid the experience of other cities, notably Erie, Pa., where the conditions of supply and surroundings are very similar to those of Michigan City and which in January and February of 1911 was visited by a terrible epidemic of typhoid fever causing 800 cases and 80 deaths in ten weeks, I recommended that immediate steps be taken for the installation of the treatment.

Following the presentation of the facts above referred to action was taken on the motion of Judge J. F. Gallaher and the Board of Public Works, the Lake Michigan Water Co. or the Common Council, whichever body has authority in the premises, was ordered to proceed at once to make the improvements proposed. This motion was unanimously carried.

The following day, after an informal decision of the Lake Michigan Water Co. to install a purification plant, materials were ordered and excavation was begun.

On March 12th, in compliance with a request from Mr. Fred C. Miller, Mayor of Michigan City, I again visited the city to go over the plans for the treating plant, which had been made since my last visit and to inspect the work that had been done. But little headway had been made because of the inclement weather. The brick work was completed to the second story and a number of the floor joists laid. Considering the weather, the progress has been very good. The work will be completed as fast as the conditions permit.

On May 7th, a communication was received saying that the plant was completed and ready for operation, and I went to Michigan City May 13th. A few minor adjustments and connections were made. The large solution tanks were measured and float gauges installed so that the amount of solution fed could be determined at any time. Water was put into the large tanks and tests run to determine the feed of the different notches of the orifice box. On May 16th the first mixtures of hypochlorite of lime and water was made and in the afternoon the first treatment was started.

Tables showing the proper amount of solution required for the varying pumpages were made; also a chart showing the feed of the orifice boxes was constructed.

Analyses of the water from samples taken just before and after treatment are shown in the table, laboratory numbers 5750, 5751 and 5762. There is an entire absence of gas-forming bacteria in the treated water, although there is gas in the sample from the new intake and positive coli in the one from the old intake.

A laboratory will be installed to assist in the control of the treatment, and with careful and intelligent supervision the public will be amply protected from water-borne diseases.

On August 27th, in response to a telephone call from Dr. Whitfield Bowers, John C. Diggs was sent to Michigan City to install the laboratory and set it in operation. The following is the report made by Mr. Diggs:

> A room in the wing recently built onto the pumping station has been equipped as a chemical laboratory. Tables for carrying on the chemical work, with lockers below for holding apparatus and supplies, have been installed. The laboratory was equipped with good plumbing and running water; no gas, however, being available.
>
> The apparatus was set up and solutions prepared for determining chlorine, free and albuminoid ammonia, nitrites, nitrates and hardness. Other determinations, such as dissolved oxygen and oxygen consumed, will be undertaken at a later date.
>
> The bacterial laboratory is located in the laboratory of the City Board of Health in the City Hall. The necessary work was done for making counts at 37° C. and for determining gas-forming and acid-forming colonies. Later the positive tests for B. coli will be carried out.
>
> By means of these laboratories the Michigan City Board of Health is not only able to keep a close tab on the purity of the city water supply and the working and efficiency of the hypochlorite plant, but will be able to detect polluted private wells and keep a close control over typhoid fever and other water-carried diseases.

HYPOCHLORITE OF LIME TREATMENT AT AURORA, INDIANA.

H. E. Barnard, Chemist, Indiana State Board of Health:

Dear Sir—On March 8, 1912, a request was received from Mr. W. A. Winn. General Manager of the Indiana Public Service Company of Aurora, Ind., asking the assistance of this department in starting the hypochlorite of lime treating plant, the installation of which I recommended after an investigation of the conditions of the water supply June 6, 1911.

Complying with this request, I went to Aurora on March 14, 1912, and spent three days instructing the operator of the filter plant in the use of chemical, working up tables giving the proper amount of feed for the varying pumpages and personally looking after the operation of the plant.

Two 125-gallon concrete tanks, one for starting the solution and the second for mixing and storing, are used. A known amount of hypochlorite of lime is introduced into the first tank, a small quantity of water added and this is given a thorough mixing. It is then diluted with the proper amount of water to make a one-half per cent. solution and afterwards stirred so the solution will be of uniform strength, after which it is introduced into the second tank directly below it. From this second tank it is conveyed to a feeding box which regulates the flow. The solution is introduced into the suction pipe of the high pressure pumps at its outlet in the clear well reservoir. The tanks and connections are well arranged. All the work on them was done by the water company employes at a very low cost.

One bad feature is the varying speed of the high pressure pump, making the introduction of a uniform feed a difficult matter. It is regulated by a pressure governor and the pressure varies considerably, and this necessitates a close watch on the feeding control. To overcome this difficulty, a feeding device regulated by the high pressure pump is to be arranged, and in this way the amount of solution fed will be automatically controlled, doing away with the constant watching now necessary.

On March 20th the following analyses were made of samples sent to the laboratory:

ANALYSES MADE MARCH 20, 1912.

Source.	Bacteria per cc.	Coli.
Raw water, Ohio River	25,000	Gas.
After sedimentation	13,200	Negative.
Tap in pump house after treating	36	Negative.
Herdegren's greenhouse	130	Negative.
John Ullrich's drug store	53	Negative.

B. coli were not present in either the settled or treated water. By filtration and the hypochlorite of lime treatment a bacterial reduction of 99.2 per cent. is effected.

It is apparent that the consumers of Aurora are now receiving a pure water for drinking purposes, the filtration removing all turbidity and the treatment reducing the bacteria to a number within the standard of purity required.

JAY CRAVEN.

INSTALLATION OF A HYPOCHLORITE OF LIME TREATING PLANT AT THE STATE PRISON, MICHIGAN CITY, INDIANA.

At the request of Dr. Paul E. Bowers, Prison Physician, Mr. Craven took to the prison the portable device belonging to the Department for applying the hypochlorite of lime treatment to impure waters. Mr. Craven's report of conditions at the prison is as follows:

Mr. H. E. Barnard, State Chemist, Indiana State Board of Health:

Dear Sir—In accordance with instructions received, I went to the State Prison at Michigan City, April 12, 1912, for the purpose of installing a hypochlorite of lime treating plant for the water supply.

The hospital records at the prison show more or less intestinal trouble among the inmates all winter, but conditions became worse in the month of March, and samples of water sent in for analyses on March 29, 1912, showed B. coli to be present. In the last six weeks there were five cases of typhoid fever and a slight increase in other intestinal diseases.

The water supply is drawn from the lake through a ten-inch intake extending 2,700 feet into the lake. The water at the mouth of the intake is 30 feet in depth. The intake at this point is upright and extends to 12 feet above the bottom to prevent sand from getting into it.

Two Laidlow-Gordon pumps force the water into the standpipe at the prison. The average pumpage is 6,000 gallons per hour, and is intermittent, varying with the level in the standpipe. Two electric driven centrifugal pumps have been ordered and will be installed shortly. They will be automatically regulated by the level of the water in the standpipe.

To remedy the difficulty and improve the water supply, the emergency hypochlorite of lime treating plant of the Water Laboratory of the State Board of Health was installed at once. It was ready for operation April 10th, although delay in the actual starting was unavoidable because the chemical, which was ordered late Monday afternoon by express, had not arrived.

With this emergency purification plant in operation no further infection by reason of a polluted water supply will occur.

J. A. CRAVEN.

West Baden, Ind., May 18, 1912.

To the State Board of Health, Indianapolis, Ind.:

Gentlemen—In view of the unsanitary condition of our public water supply, and the consequent distribution of malarial and typhoid germs throughout our town, we would respectfully call your attention to the condition of things as above stated, and ask that you take immediate action in the matter, and send your water engineer to make a survey of the situation, draw maps and make a report of what he thinks should be done in the matter, as a basis for a permanent correction of the evils now existing.

Very respectfully submitted,

HARRY BALLARD,
ELMER SCARLET,
J. B. WHITE,
Town Board of Trustees.
DR. C. E. BOYD, M. D.,
Secretary Town Board of Health.

Attested by
JOHN F. QUINN,
Town Clerk and Treasurer.

JUNE 4, 1912.

Harry Ballard, Elmer Scarlet, J. B. White, Town Board of Trustees; C. E. Boyd, M. D., Secretary Town Board of Health:

GENTLEMEN—In response to your request addressed to the State Board of Health asking that a sanitary survey be made of the water supply of the town of West Baden, Jay A. Craven, Engineer and Chemist in charge of the Water Laboratory, and H. E. Barnard, Chemist to the State Board of Health, visited West Baden May 27th and inspected the water supply. A report of that inspection, accompanied by certain analytical data and a blue print of the town of West Baden, is herewith appended.

The water supply of West Baden is obtained from Lost River. As shown on the accompanying map, the pumping station is located about one mile below the junction of Lost River and Lick Creek. The watershed comprises about six square miles of area.

Two Dean pumps, a 10-inch and a 12-inch, with a total capacity of about 2,000,000 gallons per day, take the water from the river through an 8-inch and a 10-inch main and deliver it to the reservoir through a 4-inch and a 6-inch main. The total capacity of the pumps is much greater than can be used because of the size of the mains. The average daily pumpage is about 500,000 gallons.

The reservoir is located on the hill back of the West Baden Hotel, at an elevation of about 150 feet above the filters, or about 200 feet above the railroad tracks. The reservoir is an open pond, about 200 feet in length, 30 feet wide with a maximum depth of about 10 feet, and a capacity of about 1,500,000 gallons. It is in bad shape, no protection being provided against animals getting into it, nor against surface drainage. A road runs along the hill above the reservoir, the drainage from which reaches it. There is a considerable quantity of brush in the water, with rushes and weeds growing around the edges. The conditions prevailing at the reservoir are decidedly unsanitary.

From the reservoir the water is conveyed to two pressure filters by a 6-inch main. Each of the filters has a daily capacity of 250,000 gallons, and they were installed in 1906. Alum is used in connection with them and is forced into the water under pressure. The number of grams used per gallon is not known, the quantity being added in varying amounts according to the judgment of the operator in charge.

The filters are washed every other day, the effluent of one being used to clean the other. During ordinary periods it requires about an hour to wash each filter, but when the river is high the turbidity is very high and each filter requires about one and one-half hours properly to clean it. The filters are similar to those in use at other places with satisfactory results, and at normal periods they give an effluent of good appearance, with turbidity none, or but slight. The pressure on the filters is 65 pounds, and after passing through them it is 60 pounds, showing a loss of but 5 pounds.

From the filters the water is distributed to the consumers through a 4-inch main. This main is too small to give sufficient water for their use and in case of a fire would not provide adequate pressure.

The accompanying analyses show the condition of the water at various stages in its purification. Samples were taken in the river, at the inlet to the reservoir, before and after filtration.

It will be noted that the chemical and bacterial composition of the four samples taken is very similar, the only difference noted being a reduction of the total and fixed solids, and the color in the sample that had passed through the filter. The fact that B. coli, which were present in the river water and in the water from the reservoir, was also observed in the filtered water, is evidence that the treatment given the water in the filters, while sufficient to reduce the color and remove turbidity and sediment, is not sufficient to remove bacteria. The fact that bacteria of the colon type are present in the water is sufficient evidence that additional treatment is essential to its proper purification. Such treatment is outlined in the recommendations following.

RECOMMENDATIONS.

At the pumping station more protection should be provided against flooding of the engine pit, to prevent any possible shut-down of the plant when extreme high water is experienced. Although the shut-downs have been infrequent, one may occur at a critical period, such as at the time of a fire, when all available water would be needed. A dike around the station would provide sufficient protection.

The present reservoir should be abandoned and a new one constructed on the top of the hill where the present one is located, and at such an elevation that an increased pressure of 25 to 30 pounds would be available. This would give the inhabitants in the higher parts of town sufficient water and also provide adequate fire protection.

As the filters can not properly handle the high turbidities met with, sufficient sedimentation should be allowed in the reservoir to care for the execess. The reservoir should be divided into two parts, one holding about a day's supply and the other about a four days' supply, the two to be connected by an overflow or weir. The two parts should be so connected with by-passes that one could be put out of commission and cleaned without an interruption of service.

An alum feed should be provided at the pumping station to treat the water when necessary in addition to the treatment of the filters. In this way 75 per cent. or more of suspended matter could be settled out in the first or smaller basin, where it could be easily disposed of.

The proposed site for a new reservoir is well adapted to the situation. A level space on the top of the hill sufficiently large for the reservoir, is at the depth of six to eight feet underlaid with a sandstone ledge, from which stone could be quarried for the construction work and which would provide a good foundation. Additional stone could be obtained at a nearby quarry. In this way the high cost for banking materials would be greatly reduced.

If at any time it should be necessary to effect a reduction in the bacterial content, a hypochlorite of lime treatment could be installed at a low cost.

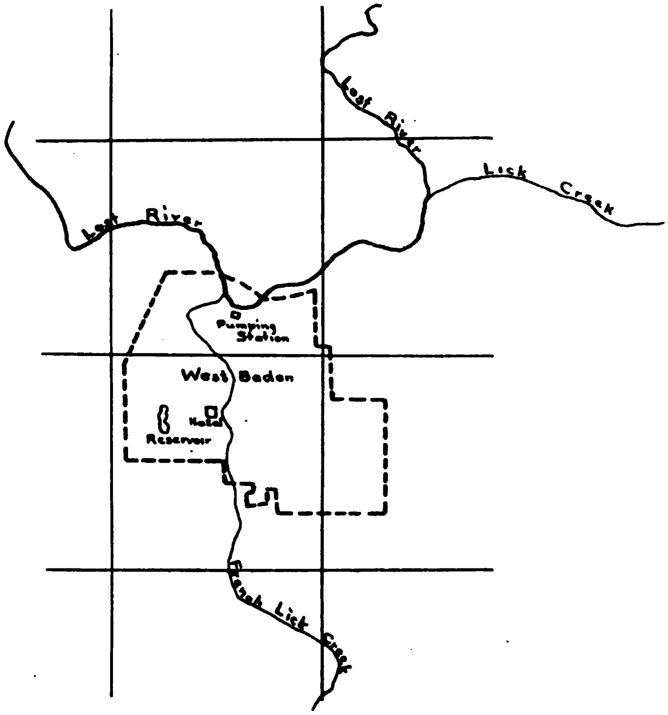
Respectfully submitted,

H. E. BARNARD,
Chemist to the Indiana State Board of Health.

WATER ANALYSES: WEST BADEN

Parts in 100,000.

Laboratory No.	Date of Collection.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	Remarks.
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
5783	5-27-12	Earthy.	4	Slt.	Dec. Br.	.0015	.0040	.1500	.0000	.4	18.0	14.2	13.2	.01	This water shows B. Coli on duplicate tests.
5784	5-27-12	Earthy.	22	Dec.	Dec. Brown.	.0060	.0170	.1500	.0001	.4	40.0	31.1	13.6	.00	This water contains B. Coli.
5785	5-27-12	Earthy.	22	Dec.	Dec. Brown.	.0030	.0090	.1500	.0001	.4	28.0	19.8	13.2	.00	This water shows B. Coli.
5786	5-27-12	Earthy.	22	Dec.	Dec. Brown.	.0030	.0080	.1500	.0001	.4	27.0	18.6	13.2	.00	This water shows B. Coli.



MAP
of
West Baden, Indiana.

jab

AN INVESTIGATION OF THE WATER SUPPLY OF WARSAW, INDIANA.

J. A. Craven, C. E.

The water supply of Warsaw, Kosciusko County, Ind., has been investigated at different times during the last few years,[1] the object being to obtain a water of better quality than that now available. It is taken from Center Lake, which is about 100 acres in area, the bottom of which is sandy and marshy. The water shed comprises about 300 acres, with residences half way around the lake and farms and marshes the rest of the way.

As a result of previous investigations the sanitary conditions have been materially improved, but there is room for still better surroundings. The city is using land near the lake for dumping rubbish, etc., the drainage from which at times goes into the lake. A row of houses, about half a dozen in number, not connected to sewers, have outhouses between the houses and the lake, and there are also several stables and pig pens. The slope being toward the lake, the waste and filth is washed into it. The surface water from North Buffalo Street also find its way into the lake.

The city has not done its part fully in protecting the water shed, although it insists on a good water supply. The water company, in its endeavor to obtain a good water supply, has sunk 17 wells, but a sufficient amount of water cannot be obtained. Another well has recently been put down to a depth of 400 feet in hopes of finding more water, but without success.

The population of Warsaw is 5,000 and the average daily pumpage is 1,000,000 gallons. Very few people use the water for drinking purposes at the present time. Direct pressure is used in winter and a standpipe is kept full in summer to assist in equalizing the pressure. Worthington duplex pumps of 1,000,000 gallons each are used. A pressure filter system of 500,000 gallons capacity had been in use but was abandoned when its capacity was exceeded, and no further steps along this line had been undertaken.

The lake water occasionally develops a fishy taste and smell, which it was hoped might be avoided if a sufficient supply could be obtained from deep wells. Since it seems impossible to find an adequate deep well supply, the only logical course left open is to continue to use water from Center Lake after giving it such treatment as may be necessary to render it potable.

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[1] See Ind. State Board of Health Rep. 1910, page 447.

A hypochlorite of lime treatment was recommended to Mr. F. C. Frazier, general manager of the water company, while visiting this department, and he requested that help be given him in investigating the feasibility of the treatment.

Acting on instructions, on March 13, 1912, I visited Warsaw. I found conditions at the pumping plant well adapted for the installation of a treating plant. The larger part of the first cost of a plant is the building for housing it. A large room which contains filters could be used after their removal. The water company can build the concrete tanks and make the connections themselves, reducing the cost of the plant to a minimum. The maintenance cost would be very small.

The hypochlorite of lime solution can be injected into the water at the suction of the pumps. The passage through the pumps will assist in the mixing.

This investigation of the conditions of the water supply with regard to the advisability of a hypochlorite of lime treatment bear out the recommendations made to Mr. Frazier at the time of his visit to this department.

INVESTIGATION OF THE WATER SUPPLY AT RUSHVILLE, IND., AS THE POSSIBLE SOURCE OF TYPHOID FEVER INFECTION.

J. A. Craven, C. E.

Acting upon instructions, on August 29th, I visited Rushville, Ind., to investigate the cause of the unusual number of cases of typhoid fever reported as prevailing there.

The city has suffered but little from the disease in years past, and the presence of several cases at one time produced fear of a general epidemic and directed suspicion against the water supply as a possible source of infection.

In order to ascertain if any one source was the cause of infection, attention was paid in each of the four cases reported to the water and milk used, and also to the stores where the groceries were obtained.

The results of the survey of each case were as follows:

Case No. 1 was that of Chas. Younger, white, age 37, a mechanic, working in a small shop of his own. The only water used in this case for drinking purposes was from the city supply, but a well on the premises was used for all other purposes. The milk used was obtained from James Gordbar, who keeps a cow for the use of his own family, and also supplies one or two of the neighbors.

Case No. 2 was that of Katherine Blount, white, age 7, daughter of Dr. R. T. Blount. The family has a well on the premises, but uses city water exclusively. The milk is obtained from one Trahue, who has but one cow. Four or five days before the child was taken sick the family had been to the Country Club and had used water taken from a shallow well. This well had to be primed occasionally and the water for this purpose was taken from the mill race.

Case No. 3 was that of Ellen Duncan, white, age ten, whose father is caretaker at the Country Club. The girl was brought home sick from Morristown, where she had been for three weeks, and it was believed she contracted the fever there. At home the family uses the city water, having no other on the premises. They also have their own cow.

Case No. 4 was that of Edgar Ridout, white, age 38. He is a laborer and travels about the country in connection with his work, the inspection of oil mains. At home the family uses the city water, and it is believed the father contracted the disease while away working. The milk used was obtained from James Gordbar.

In two of the cases, Chas. Younger and Edgar Ridout, the milk is obtained from the same place, but evidently it is not the source of infection, as the Gordbar family are all in good health and the cow itself is in the pasture all the time with the exception of a short time each day when brought to the stable for milking. The stable is dry and in good condition.

City water is used in all cases, but the supply is drawn from deep wells, and former analyses have shown the water to be free from pollution. There are seven eight-inch wells, varying in depth from 57 to 208 feet, but in the case of the deepest one, but 89 feet of it is in use. Air lifts are used in six of the wells and an electric motor-driven pump on the other. All are drilled wells and are all sealed, the tops in each case being about five feet below the surface of the ground. The water is lifted to a concrete reservoir 22 feet in depth, holding 420,000 gallons. Two Worthington horizontal compound non-condensing pumps of 1,500,000 gallons capacity each get their suction by gravity from the reservoir and supply the consumer by direct pressure.

The water is unusually hard and because of this fact water is pumped from Flat Rock to supply the boilers at the pumping station, and also those of a few factories. An independent system is used, there being no connection between the water from the wells and the river as it is ordinarily used. A separate air lift is used to lift the water from the river to a small pump which forces it into an elevated wooden tank, 18 feet in diameter and 18 feet deep, with a capacity of 35,000 gallons. In the case of a large fire where the well water supply might be inadequate, provision is made whereby the river water may be pumped to the reservoir. This has never been done, and in case it should become necessary, the consumer would be notified to that the water would not be used without boiling. The river water is also very turbid and could easily be detected, if mixed with the well water.

Each year the well water is diminished, the level lowering about four feet annually. Eight new wells have been sunk recently, four of which yield no flow. Two recently tested yield a little over 80 gallons per minute with steady pumping. Two others have not as yet been tested. The average daily consumption of water is about 480,000 gallons.

No general deduction can be made from the information obtained. The milk supply is evidently satisfactory and the purity of the city water cannot be questioned. The quality of the shallow well water of the Country Club is at least doubtful and the practice of priming the pump with water from a probably polluted mill race is dangerous in the extreme.

THE WATER SUPPLY OF INDIANA UNIVERSITY, BLOOMINGTON, INDIANA.

J. A. Craven, C. E.

In response to the request of Dr. W. L. Bryan, president of Indiana University, on September 25th I went to Bloomington to confer with the Water Committee of the University with regard to the improvements of its water supply. For years past the University has obtained its water from the supply of the city of Bloomington. As the city and the University have grown, this supply has become inadequate, and in the summer of 1910 was wholly insufficient to meet the needs of the community. The shortage of water during the year seriously handicapped the University and made imperative the installation of an adequate supply. Because of the conformation of the country a deep well supply could not be obtained, and as no rivers or creeks flow within reach of the city it became necessary to impound surface water, therefore a dam thirty-four feet in height and two hundred feet in length was built across a gully about three and one-half miles east of the University. This dam created a catchment area of approximately two hundred acres, and formed a reservoir with a water surface of about four acres and a capacity of approximately 20,000,000 gallons.

The dam was completed in July, 1911, and the reservoir began to fill in September. There was very little run-off until the middle of September, when a three-inch rain raised the pond from a nearly empty condition to within eight feet of the top. By the end of September it was completely filled and during October the water was spilling over the crest. No leakage has developed in any part of the structure of the dam nor through the bottom or sides of the valley.

A triplex Deming pump driven by a 25 H. P. Otto gasoline engine, forces the water against a static head of 222 to 240 feet, to a reinforced concrete tank of 120,000 gallons capacity. The tank is about one mile away from the reservoir and has an elevation of 100 feet above the University Campus. The average daily consumption is about 90,000 gallons.

No attempt was made to use the water this fall, but analyses made showed B. coli to be present, and the lower half layer of water showed an entire absence of dissolved oxygen. The odor from the water was a very stagnant, repulsive one, increasing with the depth. All the oxygen had been used up by the decaying vegetable matter left on the bottom and sides of the reservoir. Most of the weeds, grass, trees and shrubs had been removed by cutting and raking, but no attempt was made to remove the roots and other buried matter, as should have been done, to a depth of a foot.

The water, on account of the odor, could not be used for drinking purposes, and the only remedy available was to allow the water to drain out slowly from the bottom of the reservoir. The same difficulty was experienced when the city reservoir at Bloomington was built, and it was nearly three years before this was overcome. It may be necessary to allow one of the waste valves to be partially open all the time and instead of having it overflow at the crest, to drain the excess of water from the bottom.

The University did not secure control of the water shed and all the drainage from one farm house, and a farm carrying considerable stock, goes down a small gully and into the reservoir.

The presence of B. coli in the water which has been observed from time to time, is no doubt due to the contamination from this portion of the water shed. It is advisable that the University obtain possession of this farm and so remove the last source of possible contamination. The hypochlorite of lime treatment can be employed to reduce the bacterial content, kill pathogenic bacteria and so render it safe for drinking purposes. The temporary hypochlorite of lime plant belonging to the State Board of Health was sent to Bloomington and installed for this purpose.

The present situation can no doubt be remedied by drawing off the stagnant water and continuing the hypochlorite of lime treatment, but a permanent relief should be sought. This can be obtained by the installation of a filtration plant properly equipped for coagulation and treatment with hypochlorite of lime in connection with filtration and aeration. Aeration can be applied with 30 feet of water. There will still remain the necessary head for the operation of the filters by gravity. Since the water is a surface water it will usually show more or less color and turbidity, which can best be removed by coagulation and filtration. It also seemed advisable to raise the height of the dam and so to increase the capacity of the reservoir that the possibility of a water famine will be avoided.

It is recommended that the following measures be taken to secure a temporary relief from the present unsatisfactory condition:

1. The reservoir should be drained from the bottom until all stagnant water is removed.
2. The water should be treated with hypochlorite of lime to insure proper sterilization.
3. All farm operations involved in the pasturing of stock or the fertilization of land with stable manure, should be abandoned on every part of the water shed.
4. All wastes from the house or water shed should be sterilized or otherwise destroyed.
5. The privy should be constructed with a tight vault.

For permanent improvements it is recommended that:

1. A filtration plant with coagulation and chemical treatment be installed and provision made for aeration of the water.
2. The capacity of the reservoir should be increased by raising the height of the dam.

3. To avoid costly mistakes and needless expenditure of money, the construction of a filtration plant should not be undertaken except under the supervision of a competent engineer who is familiar with such construction.

This last suggestion, obviously unnecessary, is made only because of the fact that engineering work is constantly brought to our notice which is ill designed, inadequate and constructed at a needless waste of money.

REPORT

OF

SANITARY SURVEY

OF THE

WABASH RIVER

BY J. A. CRAVEN,
Sanitary Engineer.

INTRODUCTION.

During the summer of 1912 the Indiana State Board of Health made a survey of the Wabash River from Bluffton to its junction with the Ohio. The survey was the third of a series planned to determine the sanitary condition of all the larger rivers in the State, the Ohio and Wabash rivers having been surveyed in 1911 and 1912.

Although at present the majority of Indiana cities depend upon ground water for their source of supply, it is but a question of time before a change will have to be made from ground water to surface water supplies in many cities. Many supplies are now pumped to capacity and increased consumption will require the addition of a filtered surface water to supplement the ground water supply.

On page 56 of Water Supply Paper No. 254 of the United States Geological Survey is the following statement by Stephen R. Capps:

"There are few places in the area (north-central Indiana) where enough water for domestic purposes cannot be obtained at moderate depths. Difficulties are often met, however, in obtaining wells of sufficient yield for public supplies or for manufacturing purposes where large quantities of water are needed."

Another statement made is, "Within the memory of many older residents the water table in certain areas has been lowered from five to six feet below the surface to fifteen to twenty feet below. In these areas dug wells which for years furnished an unfailing supply of water are now dry for the greater part of the year."

When it becomes necessary to use these surface supplies, they should be in good condition, and it is only by careful supervision at the present time that they can be so maintained. If the sewage and manufacturing wastes are to be discharged into our rivers in constantly increasing quantities without any regard to the future, the burden upon filtration plants, whose use will be necessary in connection with a surface water, will be so great as to endanger the drinking water. The discharge of these increasing wastes will drive the fish from the rivers and will be a constant menace to the health of those living along the banks.

The following report covers in detail the work done by the Indiana State Board of Health during the summer of 1912 in an investigation of the sanitary conditions of the river, attention being given to the quality of the river water, and sanitary conditions of the cities and towns along the river. At each city and town investigations were made of the water supplies, the sewerage system, the disposition of garbage and night soil, the disposal of manufactural wastes, and typhoid fever. The data recorded during the course of the survey are as follows:

1. Sanitary analyses of water from the Wabash River.
    a. Several sets of samples from established sampling points at the large cities.
    b. Single samples at points between cities.
    c. Cross-river samples at established sampling points.
    d. Samples at varying depths.
2. A sanitary analysis of water from each tributary of the Wabash.
3. A sanitary analysis of the water supply of each city and town visited, including analyses of water not taken from the Wabash River.
4. A thorough survey of all water plants utilized by Indiana cities situated on the Wabash.
5. A thorough survey and description of all sewerage systems utilized by Indiana cities along the Wabash.
6. A determination of the volume and character of manufacturing wastes at all points.
7. The collection of data on the disposal of garbage and night soil.
8. The collection of data showing typhoid mortality.

The sanitary analyses include bacterial and chemical data as follows:

1. Bacterial.
    a. Bacteria counts on gelatin.
    b. The presence of B. coli.
    c. A differential test for B. coli on every tenth river sample.
2. Chemical.
    a. Estimation of chlorine.
    b. Estimation of nitrites.
    c. Estimation of nitrates.

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d. Estimation of oxygen consumed.
e. Estimation of dissolved oxygen.
f. Estimation of alkalinity.

The appendices contain detailed information relative to two state institutions and to all Indiana cities and towns on the river.

To assist in the survey a house-boat with two rooms, one for the laboratory and one for living quarters, was built at Lafayette. A complete description of it is given elsewhere. All the laboratory work was done on the boat, with the exception of the solids on a few of the sewage and manufacturing samples. The examination of the samples within a short time after collection gave more accurate and valuable results than could have been obtained if it had been necessary to ship them to a central laboratory.

ACKNOWLEDGMENTS.

Valuable information was obtained from publications of the United States Department of Agriculture issued by the Weather Bureau and from Water Supply Paper No. 254, issued by the United States Geological Survey. Much interest was taken by health officers and water-works officials at the various cities and towns along the river, and it is desired to express our appreciation of the assistance rendered by them. To Mr. Dow R. Gwinn of the Terre Haute Water Works, we are indebted for the river stages at that point and for chemical and bacterial data. Through the courtesy of Dr. John White, of Rose Polytechnic Institute at Terre Haute, a paper on "A Sanitary Survey of the Water of Terre Haute" by Floyd M. Weaver and W. Lindsay Clore, was reviewed. Some of the conclusions are incorporated. The river stages and flow at Lafayette were taken from records compiled by the students of Purdue University under the direction of Prof. R. L. Sackett. We are also indebted to Professor Sackett for his interest and assistance at the time we were at Lafayette.

GENERAL FEATURES.

The Wabash River rises in Ohio and enters Indiana in Adams County, flowing northwesterly through Adams, Wells and Huntington counties, thence in a general southwesterly direction to near the western border of the State in Fountain County, where it turns and flows almost due south to the Ohio River. The accompanying map of Indiana shows its course through the state.

The drainage basis of the Wabash embraces an area of about 33,000 square miles, of which 24,350 lie in the State of Indiana. This is a little more than two-thirds the total area of the State. As shown on the map of the Wabash River drainage basins, the area not drained by the Wabash River is a narrow strip along the Ohio River and the northern end of the State. About one-fourth of the northern half, or 4,500 square miles, drains into Lakes Erie and Michigan through the Maumee and St. Joseph rivers, while the drainage from a considerable area in the western portion finds its way to the Mississippi through the Kankakee and Iroquois rivers. A very small portion of the watershed at the head waters of the river lies in Ohio, and the remainder, about 8,000 square miles, is in Illinois.

The greater part of the basin lies inside the glacier boundary. The valley occupied by the Wabash River is deep and well defined, and although it does not have a uniform development from source to mouth, the greater portion of it is cut 110 to 150 feet below the level of the bordering uplands. In its upper part, from its source to Huntington, the valley has been entirely formed by the present stream and is a shallow and narrow trench. At Huntington the river enters the old westward outlet of a glacial lake that occupied part of the basin of Lake Erie, and which has a fall several times as great as that of the river above this point. The old lake outlet opened a new line of drainage in its westward course across Indiana, except for a few miles in the vicinity of Lafayette, where it crosses or follows a pre-glacial valley for a few miles. Considerable cutting in rock has been done from Huntington down as far as Covington, and there are still many rapids at several points. Below Covington the stream follows very nearly in the line of a partly filled pre-glacial valley. Along this valley the stream has removed a portion of the glacial deposits in seeking a channel. The flood plain of the stream varies in width from one-quarter to two or three miles, and is generally limited by bluffs of Niagara limestone, into which the valley has been cut.

The length of the valley occupied by the Wabash is about 450 miles, but the length of the stream is fully 500 miles, for the river in its lower course makes several ox-bow curves. The estimated distances between the different cities and towns is given in the table on water supply data. The greater portion of Indiana has a gentle slope toward the southwest, as is indicated by the course of the Wabash River and its tributaries.

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mouth at low water is but 311 feet, giving an average fall of about one and one-third feet per mile. The rate of descent is far from uniform, being much more rapid in the upper portion than in the lower. There are also many rapids separated by pools and sluggish portions of the streams.

The principal tributaries on the left bank, descending the river, are the Salamonie, Mississinewa, White and Patoka rivers, and innumerable creeks, of which Loon, Treaty, Pipe, Wild Cat, Big Weaver, Big Shawnee, Coal, Sugar, Spring, Busseron, Brush and Big Creek are the larger.

On the right bank are Little Eel, Tippecanoe, Big and Little Vermillion, Embarras and the Little Wabash rivers. The larger creeks are Crooked, Indiana, Little Pine, Pine, Rocky, Redwood, Supring, Brown, Little Sugar and Ceder Creek.

The chief tributary of the Wabash is the West Branch of the White River, which enters it from the east at a point about ninety miles from the mouth. This branch drains a thickly populated region, many large cities being located upon it. The East Branch drains the district immediately east of that drained by the main river and has an area nearly as great.

The chief tributaries draining areas in Illinois are the Embarras and Little Wabash rivers, the former draining about 2,000 square miles and the latter 3,000 square miles. The Embarras River enters the Wabash about six miles below Vincennes and the Little Wabash enters about eight miles, in a direct line, above the junction of the Wabash and Ohio rivers.

POPULATION ON WABASH WATERSHED.

TABLE 1.

Year.	Land Area Square Miles.	Aggregate Population.	Aggregate Population Per Square Mile.	Per Cent. of Increase.
1880	32,913	1,696,898	51.6	....
1890	32,913	1,881,175	57.2	10.9
1900	32,913	2,183,323	66.3	16.1
1910	32,913	2,301,133	70.0	5.4

Table 1 gives the total population on the water shed, as obtained from the census taken in 1880, 1900 and 1910, the aggregate population per square mile and the per cent. of increase for each decade.

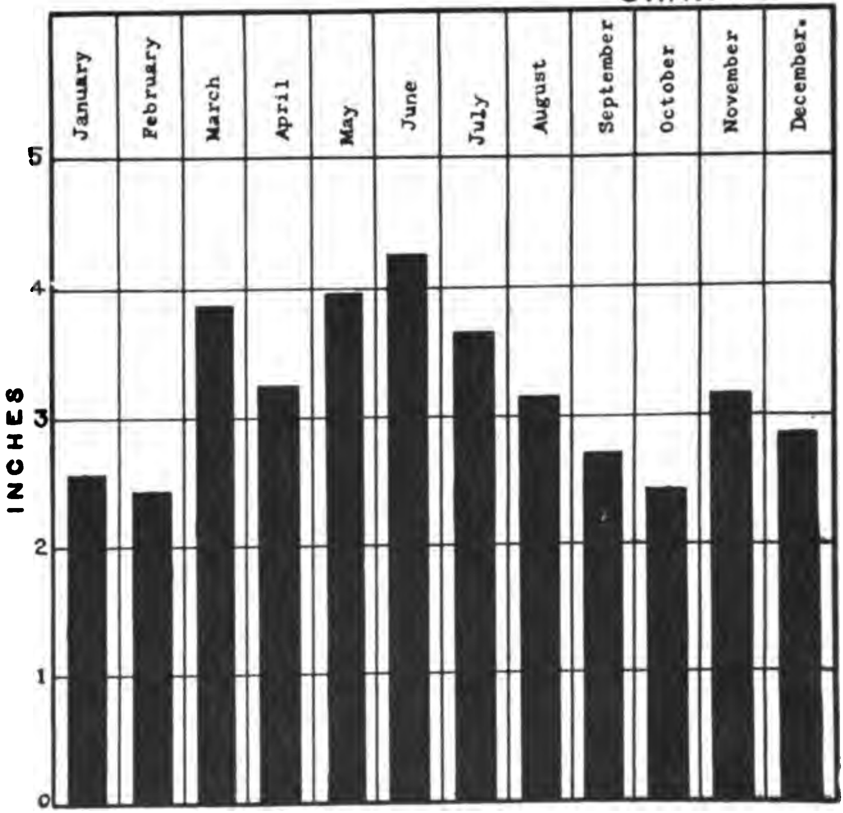
The urban population located on the river is estimated at about 182,000. Of this number 60,000 are at Terre Haute, and 57,000 at four other cities whose population is over 10,000. The population along the river may be considered as concentrated at five points.

PRECIPITATION.

The mean annual precipitation along the upper portion of the Wabash River is from 33 to 39 inches and along the lower part of the river from 37 to 55 inches. As seen in Chart 1, showing the Comparative Monthly Distribution of Precipitation on the Wabash River, the rainfall is well distributed throughout the year. The chart is compiled from the averages of the rainfall at Bluffton for

CHART SHOWING THE COMPARATIVE MONTHLY
DISTRIBUTION OF PRECIPITATION ON THE WABASH RIVER.
Average of Rainfall at Bluffton, Huntington,
Logansport, Lafayette, Terre Haute and Vincennes.

CHART 1.



thirteen years, at Huntington and Vincennes for sixteen years, at Terre Haute for eighteen years and at Logansport and Lafayette for twenty-eight.

Table 2 gives the precipitation on the Wabash Water Shed at two of the six places, Bluffton and Terre Haute, for which the foregoing chart was made. At Bluffton it is shown by months for thirteen years and at Terre Haute eighteen years.

TABLE 2.

PRECIPITATION ON THE WABASH WATER SHED.

Monthly, Annual and Average Amounts (in Inches and Hundredths). Bluffton, Wells County, Elevation 836 Feet.

YEAR.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
1896	1.31	1.52	3.42	5.29	5.63	4.66	6.53	7.85	5.04	1.04	2.31	1.82	46.42
1897	2.74	2.05	4.68	4.25	5.94	5.60	1.08	4.66	1.21	0.64	5.67	1.87	40.39
1898	3.21	2.32	6.01	2.80	6.65	2.01	3.57	1.73	2.88	2.88	3.16	2.12	39.40
1899	2.60	1.99	4.96	0.47	3.31	2.02	4.61	2.12	1.59	2.60	3.28	2.92	32.47
1900	0.83	3.95	1.92	2.92	3.34	5.01	3.03	4.15	1.87	2.74	3.88	0.93	34.57
1901	1.17	0.93	2.76	2.34	4.16	3.29	1.23	4.79	1.12	3.40	1.50	4.01	30.70
1902	0.85	0.51	3.37	1.92	2.88	9.03	5.21	2.31	6.79	2.13	2.27	2.70	39.97
1903	1.30	3.30	2.06	4.36	1.89	....	....	....	1.50	3.42	1.64	1.83	....
1904	4.61	2.06	7.95	3.30	3.17	2.19	4.98	2.62	3.00	1.85	....	....	....
1905	1.45	2.30	2.20	3.08	3.98	....	....	....	1.62	2.75	2.83	2.12	....
1906	1.72	1.70	3.68	2.43	1.84	....	....	....	1.10	2.14	3.52	....	....
1907	6.21	0.20	5.07	2.49	2.80	6.37	5.72	2.01	2.92	2.17	2.44	4.95	43.35
1908	2.23	4.45	4.90	2.93	4.24	2.32	3.34	2.98	0.56	0.55	2.09	2.09	32.58
Means	2.33	2.08	4.08	2.97	3.83	4.25	3.93	3.52	2.40	2.18	2.88	2.49	36.94

TABLE 2—Continued.

PRECIPITATION ON THE WABASH WATER SHED.

Monthly, Annual and Average Amounts (in Inches and Hundredths). Terre Haute, Vigo County, Elevation 498 Feet.

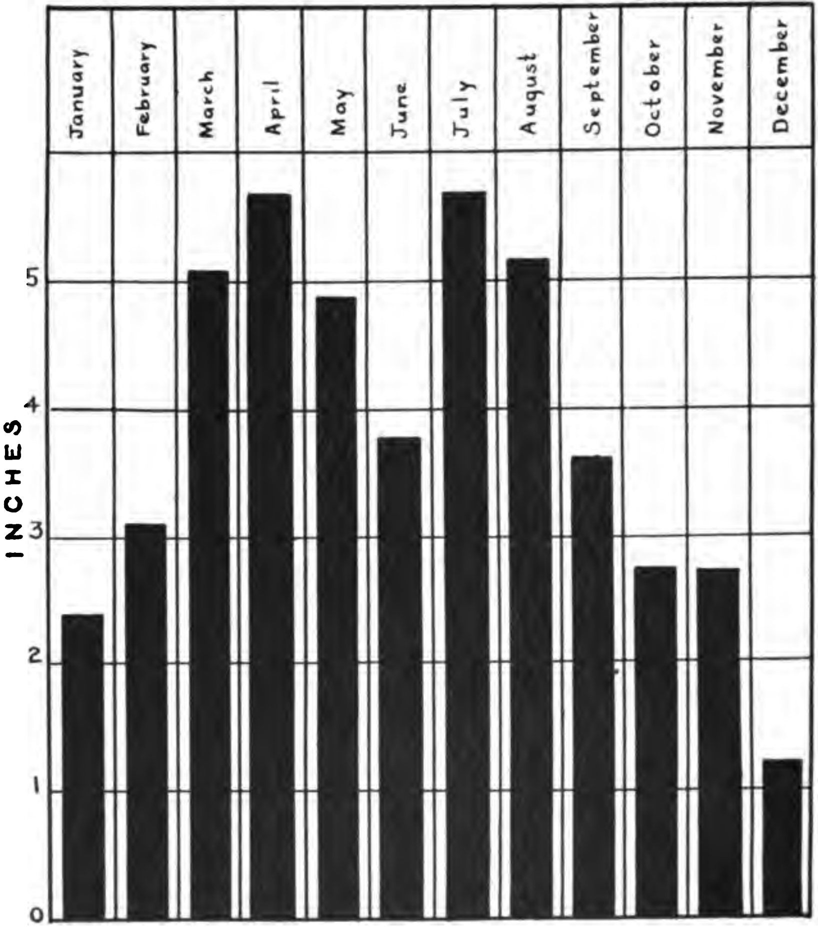
YEAR.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
1890	......	......	......	......	......	2.74	......	......	......	......	3.15	......	......
1891	......	......	......	......	......	0.69	0.48	6.69	1.46	0.90	4.83	2.41	......
1892	1.81	3.13	1.46	6.97	8.29	5.17	3.56	1.86	1.38	0.50	3.99	1.20	39.32
1893	1.28	4.98	3.81	8.37	3.94	4.30	1.73	0.59	3.98	2.20	2.90	1.72	39.80
1894	1.99	2.73	2.30	2.11	3.63	2.56	3.04	3.63	1.94	0.87	1.30	3.22	29.32
1895	2.26	0.46	1.79	4.37	0.85	2.75	4.20	4.96	2.09	0.63	4.55	3.79	32.70
1896	0.75	2.15	2.20	1.41	3.56	5.19	7.29	4.01	4.73	0.87	4.08	1.13	37.37
1897	4.09	2.56	6.29	4.33	2.86	4.83	3.68	0.64	0.30	0.54	7.10	3.97	41.19
1898	4.48	1.53	11.03	2.72	2.23	6.47	1.40	2.66	6.75	4.02	2.18	1.42	46.89
1899	2.91	2.07	4.54	1.96	4.68	2.82	2.56	1.74	0.73	3.37	2.83	2.66	31.87
1900	0.74	3.43	2.25	0.88	3.29	7.92	4.21	4.38	3.32	3.33	4.37	1.35	39.47
1901	1.16	1.59	4.39	2.98	2.47	6.51	0.46	2.63	0.42	3.06	1.93	4.18	31.78
1902	0.86	0.99	2.78	1.78	2.88	6.41	3.18	2.73	3.78	2.51	3.19	3.79	34.88
1903	2.32	3.67	2.72	4.35	3.20	2.24	2.15	3.38	2.94	3.31	1.15	1.79	33.22
1904	4.59	1.32	8.94	5.00	4.41	3.31	2.75	2.32	3.74	0.81	0.29	3.39	40.87
1905	2.45	1.80	1.60	3.37	6.23	2.23	6.68	2.43	3.52	4.33	2.85	2.37	39.86
1906	4.61	2.22	5.67	3.66	3.66	2.96	3.28	6.98	3.67	1.54	3.80	3.92	45.97
1907	7.15	0.55	4.10	3.38	3.40	7.44	4.20	3.81	2.63	2.32	3.12	3.62	45.72
1908	1.47	6.14	4.24	4.96	9.77	2.08	2.31	0.59	1.40	0.24	2.99	1.42	37.61
Means	2.64	2.43	4.12	3.68	4.08	4.14	3.12	3.11	2.71	1.96	3.19	2.63	37.81

The amount of precipitation in the form of snow decreases rapidly toward the south. At the Ohio River it averages between twelve to sixteen inches per annum.

CHART SHOWING THE MONTHLY DISTRIBUTION
OF PRECIPITATION ON THE WABASH RIVER IN 1912

Average of Rainfall at Bluffton, Huntington,
Logansport, Lafayette, Terre Haute and Vincennes

CHART 2



The total annual precipitation in 1912 on the upper was 35.24 inches and on the lower 47.37 inches.

The precipitation was deficient in January, June, November and December and above normal in the remaining months. The greatest excesses occurred in April, July and August. The monthly distribution of precipitation in 1912 is shown on Chart 2.

The January precipitation was in the form of snow except on the 18th and 19th, when a storm of rain and sleet was general. The average precipitation for the six cities as shown on the chart was 2.37 inches.

In February the precipitation was slightly above normal, being 3.01 inches. A heavy storm accompanied by snow and sleet occurred on October 20th and 21st.

Five and seven hundredths inches of precipitation occurred in March. It was heaviest in the southern part and decreased quite uniformly northward. The snowfall was greatly in excess of the average. A severe sleet storm occurred on the afternoon of the 20th.

The precipitation in April was 5.66 inches, about 2.60 inches above normal. The greatest excess was in the southern part of the State, although it was quite uniformly distributed.

The precipitation in May was about normal, being 4.86 inches. The period from the 4th to the 17th was particularly wet.

In June the precipitation was below normal, being but 3.72 inches.

The rainfall for July was very irregular, some sections receiving much more than the usual amount, others much less. The precipitation for the month was 5.62 inches, about two inches above the normal.

The rainfall for August was the greatest on record and was heaviest in the southern part of the State. It was comparatively light during the first and last weeks, but from the 7th to the 23rd it was almost continuous. During the month 5.15 inches fell.

The precipitation for September was 3.60 inches, about one inch above normal. It occurred principally during two periods, 14th to the 18th and 22nd to the 26th.

In October the precipitation was well distributed, although it occurred on comparatively few dates. The total for the month was 2.73 inches.

For November the precipitation was below normal, the total for the month being 2.71 inches.

December's precipitation was very light, being 2.58 inches below normal. Most of it occurred in the southern part. The snowfall was very light. The total for the month was 1.22 inches.

RIVER STAGES AND FLOW.

The river stage covering a period of ten years was obtained from the records of the Terre Haute Water Company, and from this data, Table 3, showing the number and depth of freshets or floods, was compiled.

TABLE 3.

NUMBER AND DEPTH OF FRESHETS OR FLOODS IN FEET, 1903 to 1912.

Gauge Readings at Terre Haute, Indiana.

Feet.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	Total.
—1	......	......	......	20	......	......	......	......	4	......	24
......	77	90	35	97	7	135	34	109	77	25	686
+1	46	70	99	60	69	30	71	59	50	85	639
2	59	39	68	26	54	35	45	53	37	46	462
3	23	14	39	32	56	13	21	40	37	41	316
4	29	34	47	34	48	6	38	31	41	28	336
5	16	9	23	12	25	8	20	22	35	18	188
6	18	12	11	15	15	12	14	13	13	17	140
7	13	11	10	9	17	11	21	4	19	10	125
8	12	5	9	7	6	16	13	4	9	14	95
9	11	4	4	8	4	11	11	1	13	11	79
10	4	9	3	8	6	5	13	2	16	6	72
11	3	1	3	6	4	8	20	2	3	12	62
12	3	4	1	4	8	5	5	1	8	5	44
13	4	4	......	4	5	4	5	3	1	3	33
14	8	10	5	5	7	11	13	1	3	10	73
15	7	6	4	5	7	10	9	5	......	6	59
16	12	7	2	5	10	8	2	5	......	3	54
17	10	13	2	3	8	13	2	2	......	6	59
18	5	5	......	2	1	11	3	3	......	5	35
19	2	2	......	2	1	7	......	4	......	3	21
20	3	4	......	......	2	3	......	......	......	2	14
21	......	3	......	......	2	1	......	......	......	......	6
22	......	1	......	......	......	1	......	......	......	......	2
23	......	5	......	......	1	2	......	......	......	......	8
24	......	2	......	......	1	......	......	......	......	......	3
25	......	2	......	......	1	......	......	......	......	......	3

NOTE.—Some readings missing due to interference of ice at gauge.

During this ten-year period the gauge showed the reading between —.5 and +.5 as the predominating record. This stage was recorded 686 times. A one-foot stage was recorded 639 times. The number of times the higher stages were recorded dropped rapidly; the seven-foot stage was recorded 125 times, the twenty-foot stage, 14 times and the twenty-five-foot stage but three times. The latter stage is the highest one recorded during the period. In the year 1906 there was less water in the river than at any other period.

A wide variation exists in the chemical and bacterial data with a varying river stage. Table 4 gives the daily river stages covering

IN FEET AT TERRE HAUTE
7
8
9
10
11
12
13
14

the period of the survey. In June a slight rise was experienced, which reached its height on the 19th. Heavy rains caused very high waters on the 15th and the 16th of July. A rise was experienced for a few days in August, beginning on the 21st. September was dry and the river stage was practically uniform.

TABLE 4.

DAILY RIVER STAGES.

At Terre Haute, Indiana, for June, July, August and September, 1912.

Day.	River Stage in Feet.			
	June.	July.	August.	September.
1	3.1	1.4	1.9	1.9
2	....	1.6	1.8	1.7
3	2.9	1.5	1.5	1.5
4	2.9	4.5	1.2	1.5
5	2.7	3.4	1.2	1.4
6	2.5	2.6	1.1	1.3
7	2.3	2.2	0.9	1.1
8	2.0	1.8	1.0	1.1
9	1.9	2.8	0.9	1.0
10	1.7	2.4	1.0	0.9
11	1.7	2.8	1.1	0.8
12	1.6	2.0	1.4	0.9
13	1.5	3.5	1.8	0.9
14	1.5	....	4.3	0.7
15	1.6	13.9	3.9	0.7
16	2.0	10.7	4.1	0.6
17	2.2	6.5	3.7	0.6
18	3.3	6.0	3.0	0.8
19	5.5	5.8	2.8	0.8
20	5.4	5.8	2.5	0.7
21	5.3	5.6	7.9	0.6
22	4.8	6.2	8.2	0.6
23	4.1	6.0	8.1	0.6
24	3.4	4.5	7.8	0.6
25	2.7	3.9	5.9	0.6
26	2.3	4.8	4.6	0.6
27	2.0	4.5	3.8	0.6
28	1.8	3.8	3.3	0.6
29	1.6	3.1	3.0	0.5
30	1.4	2.6	2.5	0.6
31	....	2.2	2.1	....

Chart 3 shows the normal stage for a ten-year period and the stage for 1912 for the months of June, July, August and September.

For the first half of June the river stage was low, for the next few days it was high, and the last five days of the month it was below normal again. It was about normal for the first twelve days of July, but this was followed by a high stage for the remainder of the summer, lasting until the 16th of September. At that time it dropped below normal. From the 12th to the 27th of July and from the 13th to the 31st of August the river stage was abnormally high.

An important factor in considering the sanitary conditions of a river is the quantity of water which is available, especially during the dry season of the year.

Table 5 was obtained from data compiled by students of Purdue University from measurements made by them. It gives the monthly discharge of the Wabash River at Lafayette, Ind., from March, 1907, to April, 1912. The principal figures of interest are the minimum flow of the river, the lowest recorded for the total period being 1,020 cubic feet per second. Table 6 gives the monthly discharge of the Wabash River at Logansport and Terre Haute for the periods noted in the table. At Logansport, where the area drained is 3,160 square miles, the minimum flow was 260 cubic feet per second. This flow was found to be 38.4 per cent. of the total average rainfall for a ten-year period, showing that 61.6 per cent. of the rainfall is lost by evaporation and ground seepage. At Terre Haute, with a drainage area of 12,200 square miles, the minimum flow was 1,920 cubic feet per second, or 28.7 per cent. of the total average rainfall over the water shed of the river above this point. At Lafayette, where the minimum flow was 1,020 cubic feet, the drainage area is 7,314 square miles.

TABLE 5.

MONTHLY DISCHARGE OF WABASH RIVER AT LAFAYETTE, INDIANA.

Drainage Area, 7,314 Square Miles.

Month.	Discharge in Second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per Sq. Mile.	Depth in Inches on Water-shed	Total Acre-Feet.
1907.						
March	48,000	3,400	16,110	2.205	2.530	990,000
April	17,600	3,600	5,840	0.800	0.892	347,000
May	10,400	3,000	5,370	0.735	0.847	330,000
November	5,600	2,500	3,336	0.456	0.509	198,000
December	53,600	2,700	11,577	1.580	1.825	710,000
1908.						
January	38,100	3,800	10,619	1.452	1.674	657,000
February	59,300	2,000	16,551	2.265	2.440	952,000
March	113,900	9,500	39,854	5.449	6.285	2,446,000
April	35,100	5,800	11,300	1.543	1.728	671,500
May	40,800	5,000	19,066	2.605	3.005	1,170,000
June	6,800	3,360	3,998	0.546	0.610	237,200
July	3,900	3,100	3,347	0.458	0.528	205,300
August	4,750	2,750	3,233	0.442	0.510	198,500
September	2,750	2,650	2,660	0.364	0.407	158,000
October	2,800	2,650	2,720	0.372	0.429	167,000
November	3,190	2,750	2,976	0.407	0.455	176,500
December	3,280	2,800	3,237	0.442	0.521	198,400
1909.						
January	3,800	2,450	3,182	0.481	0.550	197,280
February	63,000	3,360	19,833	2.982	3.120	1,110,640
March	25,480	4,000	7,340	1.100	1.270	455,000
April	47,300	4,750	15,460	2.320	2.590	927,600
May	52,100	10,120	22,770	3.431	3.950	1,411,700
June	25,020	3,220	8,468	1.158	1.490	504,900
July	7,100	2,100	2,990	0.408	0.432	183,800
August	2,960	1,800	2,211	0.302	0 320	136,000
September	6,270	1,670	2,510	0.343	0.350	149,200
October	4,730	1,800	2,420	0.331	0.348	148,800
November	18,920	1,430	4,469	0.610	0.625	265,900
December	22,730	3,040	7,171	0.980	0.905	384,500
1910.						
January	35,720	3,890	14,870	2.034	1.940	826,000
February	28,860	2,600	5,826	0.796	0.760	323,800
March	29,600	2,960	8,276	1.130	1.200	509,900
April	7,100	2,530	3,841	0.521	0.640	228,600
May	6,003	2,400	4,200	0.574	0.528	258,000
June	2,625	1,245	1,935	0.265	0.259	119,000
July	2,530	1,245	1,890	0.258	0.268	116,200
August	1,880	1,020	1,450	0.198	0.192	89,156
September	2,915	1,245	2,080	0.284	0.317	127,900
October	14,085	1,127	7,605	1.040	0.541	467,600
November	5,422	1,245	3,335	0.455	0.243	205,000
December	12,195	1,440	6,820	0.935	0.461	419,340
1911.						
May	9,455	2,100	3,840	0.525	0.586	506,000
June	4,800	1,800	1,960	0.268	0.299	258,100
July	2,680	1,600	1,890	0.258	0.288	248,100
August	2,010	1,520	1,790	0.245	0.274	236,200
September	5,260	1,750	2,650	0.362	0.404	348,500
October	4,500	2,375	3,160	0.428	0.478	412,500
November	20,450	2,180	6,550	0.795	0.886	766,000
December	26,900	3,760	8,800	1.210	1.350	1,165,000
1912.						
January	40,475	4,350	14,400	1.969	2.195	1,892,000
February	42,150	6,610	14,100	1.925	2.150	1,855,000
March	45,900	6,970	27,500	3.760	4.200	3,622,000
April	42,375	5,400	14,900	2.040	2.280	1,880,000
May	....	....	....	....	....	....

TABLE 6.

MONTHLY DISCHARGE OF WABASH RIVER AT LOGANSPORT, INDIANA.

For Periods May 1 to August 31, and December 1 to 31, 1903; March 1 to November 30, 1904; March 1, 1905, to June 30, 1906.

(Drainage area, 3,160 square miles.)

Month.	Discharge in Second-feet.				Run-off (Depth in Inches on Drainage Area).
	Maximum.	Minimum.	Mean.	Per Sq. Mile.	
January	23,000	1,320	5,280	1.67	1.92
February	2,820	294	1,320	.418	.44
March	56,100*	1,130	10,400	3.29	3.79
April	47,100	1,010	8,330	2.64	2.94
May	33,800	500	2,900	.918	1.06
June	11,000	302	3,160	1.00	1.12
July	32,900	345	2,220	.703	.81
August	2,680	260	704	.223	.26
September	7,440	260	1,190	.337	.42
October	2,120	280	628	.199	.23
November	13,300	280	1,060	.336	.37
December	8,180	380	2,470	.782	.90
The period	56,100	260	3,310	1.05	14.26

*March 4 to 31, 1904.

MONTHLY DISCHARGE OF WABASH RIVER AT TERRE HAUTE, INDIANA.

For the Period March 1, 1905, to June 30, 1906.

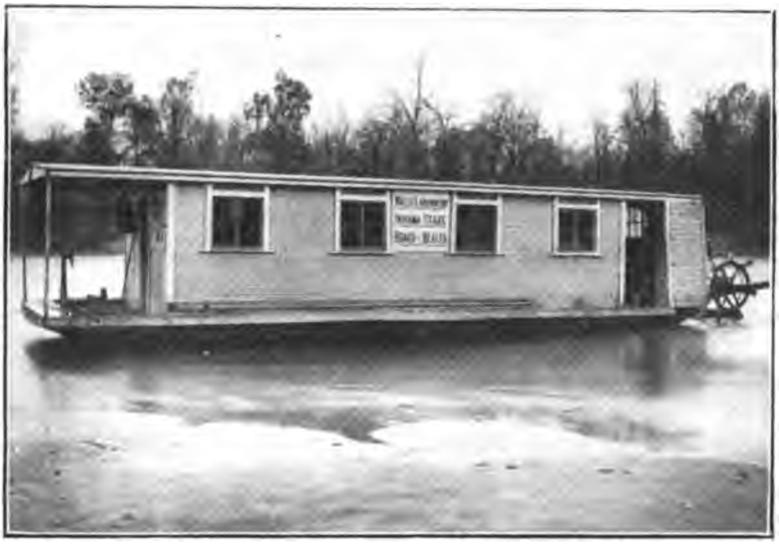
(Drainage Area, 12,200 square miles.)

Month.	Discharge in Second-feet.				Run-off (Depth in Inches on Drainage Area).
	Maximum.	Minimum.	Mean.	Per Sq. Mile.	
January	49,800	6,630	19,600	1.61	1.86
February	17,800	4,240	8,050	.660	.69
March	57,200	7,620	17,700	1.45	1.67
April	61,200	3,650	20,100	1.65	1.84
May	48,100	3,360	12,300	1.00	1.15
June	15,400	2,250	7,120	5.84	.65
July	9,270	2,150	5,250	.430	.50
August	5,100	2,250	3,420	.280	.32
September	10,100	2,610	4,980	.408	.46
October	9,650	1,920	3,950	.324	.37
November	17,200	2,640	4,840	.397	.44
December	22,100	4,470	9,880	.810	.93
The period	57,200	1,920	9,760	.800	10.88

DESCRIPTION OF THE HOUSE-BOAT.

Advantage was taken of the experience acquired on the Ohio River survey, made the previous summer, and a house-boat laboratory was designed and built which had, in a limited space, ample room for the chemical and bacterial work, and in which living quarters were also provided.

The hull was 34 feet in length by ten feet in width and had a running board along both sides. It was divided into two compartments so that any leak which might develop could be the more easily found. The cabin was 24 feet long and ten feet wide and contained two rooms, each ten by twelve feet, one of which was devoted to the laboratory and the other to the living quarters.



In the laboratory two working benches provided room for tne chemical and bacterial work. A two-burner gasoline stove and the 37½° incubator were located on the side with the bacteria bench, which is the smaller one of the two. The chemical bench took up all the available room on the other side.

For the 20° incubator a compartment was built in the lower part of the ice box, with a separate door. In this way the available space above this compartment was used without interfering with the temperatures of the incubator.

Five windows, two and one-half feet square, were provided in the laboratory and gave plenty of light for the work. In the living room there were two cots along one side, one above the other; the other two were arranged in the same way along the partition between the two rooms. They were fastened on one side with hinges and on the other by chains suspended from the ceiling. This allowed the cots to be pushed up against the wall, during the day, where they were out of the way. A small kitchen table and a gasoline stove for cooking were in the room. Shelves were provided for storing all dishes, canned goods, etc. In each room strips were nailed to the ceiling, thus making storing space for suitcases and clothes. Chairs, when not in use, were folded and fastened to the wall.

The water cooler was kept on the front or laboratory end of the boat. As the river samples were collected from this end, nothing else was stored here. On the back end of the boat were the gasoline and coal oil cans and other small articles.

After the Wabash River survey was completed, a seven-horse power gasoline engine and a paddle wheel were installed. The accompanying photograph shows the boat after these improvements were made.

WATER SUPPLIES.

One of the most important phases of the work was the investigation of the water supplies of the different cities and towns, and in this connection all available data was obtained where water works were in use.

Table 7 gives the cities and towns on the Wabash River using ground water supplies.

TABLE 7.

WATER SUPPLY DATA FOR CITIES AND TOWNS ON WABASH RIVER.

Ground Water Supplies.

Distance in Miles from Bluffton.	City or Town.	Estimated Population.	Estimated Population Using Water.	Average Daily Consumption in Gallons.	Reservoirs.		Remarks.
					Capacity.	Storage in Days.	
0	Bluffton........	5,037	2,500	500,000	....	......	Direct pressure.
30	Huntington.....	10,350	8,000	1,200,000	....	......	Direct pressure.
51	Wabash........	8,693	5,000	900,000	368,100	.40	Direct-indirect system. Standpipe.
67	Peru...........	11,154	8,000	1,700,000	1,500,000	.90	Direct-indirect system.
112	Delphi.........	2,161	1,800	700,000	686,000	.98	Direct-indirect system; standpipe 14,300 gallons.
134	Lafayette.......	20,277	15,000	3,760,000	4,200,000	1.10	Direct-indirect.
161	Attica..........	3,368	3,200	400,000	500,000	1.25	Direct-indirect.
164	Williamsport....	1,243	900	40,000	60,000	1.50	Direct-indirect standpipe.
177	Covington......	2,069	1,500	120,000	150,000	1.25	Indirect standpipe.
208	Clinton.........	6,560	4,900	165,000	....	......	Direct pressure.

The city or town, with its distance from Bluffton, the estimated population, the estimated population using water, the average daily consumption, and the reservoir capacity and storage is shown.

Ten cities and towns depend upon ground water supplies. At the present time, the supply seems abundant at most of the points, but at four of them—Huntington, Wabash, Delphi and Covington—difficulty has been experienced in supplying sufficient water when the consumption is large.

Two cities on the river use filtered Wabash River water, and one, Logansport, uses water from Eel River, a tributary of the Wabash. The Eel River water is pumped directly from the river into the mains, without any treatment. The dire results of such a dangerous practice is shown by the typhoid fever epidemic occurring in 1912, attributed directly to the water supply. This is discussed in the paragraphs on typhoid fever. The two other cities, Terre Haute and Vincennes, have efficient filtration plants.

Data similar to that compiled for the cities and towns using ground water supplies is given in Table 8 for the cities using river water.

TABLE 8.

WATER SUPPLY DATA FOR CITIES AND TOWNS ON WABASH RIVER.

Using Wabash River Water.

Distance in Miles from Bluffton.	City or Town.	Estimated Population.	Estimated Population Using Water.	Average Daily Consumption in Gallons.	Reservoirs.		Capacity.
					Capacity.	Storage in Days.	
87	Logansport.....	5,037	2,500	4,800,000	....	......	Supply from tributary, Eel River.
236	Terre Haute....	60,305	30,000	4,266,000	770,000	.18	Filtered water.
325	Vincennes......	15,359	9,000	1,400,000	568,000	.41	Filtered water.

SEWERAGE.

The total population in cities on the Wabash River having sewers is 172,440. It is estimated that 68,175, or 40 per cent. of the total urban population, have sewer connections. The total population is distributed in fifteen cities, 79.5 per cent. being located at six of the cities. Thirty-four and nine-tenths per cent. of the total population is at Terre Haute, and 32.9 per cent. of the population have sewer connections.

All the cities have a total length of 158 miles of sanitary or combined sewers and nine miles of storm sewers. Terre Haute has fifty-six miles, or 35.4 per cent of the total mileage. Wabash has eight of the nine miles of storm sewers.

TABLE 9.

SEWERAGE DATA FOR CITIES AND TOWNS ON THE WABASH RIVER. BLUFFTON TO NEW HARMONY.

Distance in Miles from Bluffton.	City or Town.	Estimated Population.	Estimated Population Connected to Sewers.	Miles of Sewers.		Number of Outlets Into Wabash River.		Number of Outlets Into Local Streams.		Remarks.
				Sanitary or Combined.	Storm.	Sanitary or Combined.	Storm.	Sanitary or Combined.	Storm.	
0	Bluffton........	5,037	2,000	10.2	......	4	......	......	......	
30	Huntington.....	10,350	7,000	16.4	......	......	......	8	......	Little River.
51	Wabash........	8,693	4,350	15.8	8	3	3	......	......	
67	Peru...........	11,154	3,700	17.1	......	10	......	......	......	
87	Logansport.....	19,334	8,000	12.0	......	5	......	5	......	Eel River.
112	Delphi.........	2,161	800	2	½	......	......	1	1	Deer Creek.
134	Lafayette.......	20,277	10,000	16.25	......	6	......	......	......	
134	W. Lafayette...	5,800	4,300	4	......	2	......	......	......	
161	Attica..........	3,368	1,100	1.5	......	2	......	......	......	
164	Williamsport....	1,243	400	1.5	......	......	......	2	......	Fall Creek.
177	Covington......	2,069	500	1	......	2	......	......	......	
192	Cayuga........	732	....	......	½	......	......	......	2	Big Vermillion River.
208	Clinton.........	6,560	800	1.25	......	3	......	......	......	
236	Terre Haute....	60,305	22,000	56	......	5	......	......	......	
325	Vincennes......	15,359	2,000	4	......	9	......	......	......	A new system totaling 43 miles is being built.

The accompanying table shows the cities, the distance of each from Bluffton, the estimated population, the estimated population connected to sewers, the number of miles of sanitary or combined and storm sewers, the number of outlets of each into the Wabash River and the number of outlets of each into local streams.

At Vincennes a new sewer system is under construction, which, when completed, will give the city a total length of forty-three miles, making it the most complete system of any city on the river. The plans include a sewage treatment plant, which, however, will not be built at the present time.

DISPOSAL OF GARBAGE AND NIGHT SOIL.

The methods used in the disposal of garbage by the twenty-four cities and towns on the Wabash River are cremation, reduction, feeding hogs, dumping into the Wabash River or along the shores and dumping away from the river. Of the twenty-four six have no systems.

TABLE 10.

DATA ON THE DEPOSITION OF NIGHT SOIL IN WABASH RIVER CITIES.

Method.	Number of Cities and Towns.	Estimated Population.	Estimated Population Using Sewers.	Estimated Population Using Vaults.
Used as fertilizer or buried in rural district..	18	171,498	68,175	103,323
Filled vaults abandoned..................	2	1,332	....	1,332
No system..............................	4	8,364	800	7,564

Table 10 gives the method, number of cities and towns using the different methods and the combined population of these cities and towns.

Huntington, Lafayette and Terre Haute have satisfactory crematories in operation. A reduction plant is located at Vincennes.

Night soil is hauled to the country, where it is used as a fertilizer or is buried, or the filled vaults are abandoned and covered with earth. In eighteen of the cities and towns the first method is in use, and in two, the vaults are abandoned. The total population represented by the eighteen cities is 171,498, of which 103,323 are using vaults. Four towns, with a population of 8,364, have no system for the collection and disposal of the night soil.

The data on the deposition of night soil is given in Table 11.

TABLE 11.

DATA ON THE DEPOSITION OF GARBAGE IN WABASH RIVER CITIES.

Method.	Number of Cities and Towns.	Combined Estimated Population.
Crematory..	3	90,977
Reduction..	1	15,359
Feeding hogs...	6	40,668
Dumped into Wabash River or along the shore........................	3	11,465
City dump away from river..	5	18,405
No system..	6	4,365

MANUFACTURING WASTES.

Table 12 gives the manufacturing establishments emptying detrimental wastes into the Wabash River. In the table is given the city or town, the name of the company, the number of employes, the product, source of water supply, and the kind and amount of wastes.

TABLE 12.

MANUFACTURING CONCERNS IN INDIANA DISCHARGING WASTES INTO THE WABASH RIVER.

City or Town.	Name of Company.	Number of Employes.	Product.	Source of Water Supply.	Wastes.		Remarks.
					Kind.	Amount Gallons Per Day.	
Wabash	United Box Board Co	160	Strawboard	River	Straw, lime, etc	2,000,000	
Wabash	Wabash Canning Co	50	Tomatoes, corn and peas	City water	Wash water		A silo is in use.
Logansport	Wm. C. Routh & Co	90	Meat	Spring	Wash water	75,000	
Logansport	Heppe Soap Co	6	Soap	Creek			
Delphi	Great Western Canning Co.	15	Kraut, corn and hominy	City water	Wash water, etc		
Lafayette	Lafayette Box Board Co	200	Strawboard	River and deep wells	Straw, pulp, lime, etc	1,500,000	
Terre Haute	Commercial Distillery	100	Whiskey	Deep wells	Still tankage, offals from barns.	1,000,000	Average number of cattle fed during season, 3,300.
Terre Haute	Merchants' Distillery	90	Whiskey	Deep wells	Still tankage, offals from barns.	1,500,000	Average number of cattle fed during season, 3,000.
Terre Haute	Indiana Distillery	100	Whiskey	Deep wells	Still tankage, offals from barns.	1,000,000	Average number of cattle fed during season, 3,000.
Terre Haute	American Filler Co	100	Paper boxes	Artesian wells	Straw, pulp, lime, etc	1,000,000	
Vincennes	Indiana Board and Filler Co	50	Strawboard	River	Straw, pulp, lime, etc	400,000	
Vincennes	Empire Paper Co	35	Strawboard	Deep wells	Straw, pulp, lime, etc	600,000	
Vincennes	Old Vincennes Distilling Co	35	Spirits, whiskey, alcohol	Deep wells	Waste water		Slops dried for feed.
Vincennes	Murphy Distilling Co	30	Spirits, whiskey, alcohol	Deep wells	Waste water	300,000	Liquor from slops fed to 300 cattle.
Vincennes	Dyer Packing Co	192	Baked beans and catsup	City water	Waste water	400,000	Solids hauled.
Mt. Carmel, Ill	United Box Board Co	60	Strawboard	River	Straw pulp, lime, etc	500,000	

In six cities in Indiana fifteen concerns, five of them strawboard works, three canning companies, one soap company, one packing house and five distilleries, discharge detrimental wastes into the river. One strawboard works in Illinois is located at Mt. Carmel. The strawboard works and distilleries contributed the greater part of the wastes. At the former, the total number of men employed is 605, and the latter, 355. The strawboard works empty 6,000,000 gallons of wash water, straw pulp, lime, etc., into the river each day, and the distilleries discharge 3,800,000 gallons of still tankage, offals from the barns, etc., per day. At the distilleries 10,000 cattle are fed during the season. The character of the pollution by the wastes from manufacturing establishments can readily be seen in Table 13.

TABLE 13.

SAMPLES OF MANUFACTURING WASTES DISCHARGED INTO WABASH RIVER.

Date.	Laboratory No.	ampling Point.	Chemical.							Bacterial.		Solids.		Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per CC.	Coli, Presumptive Test.	Total.	Fixed.	
June 25	109	Lafayette.......	14.0	.0001	.5000	.0000	17.0500	70.0	Dec....	3,600,000	+	845.2	359.4	Big sewer effluent from Strawboard Works.
June 25	110	Lafayette.......	4.7	.0004	.2000	.0000	5.5700	34.0	Dec....	2,500,000	+	237.6	113.2	Small sewer effluent from Strawboard Works.
June 25	111	Lafayette.......	8.0	.0000	.0000	.4686	.0000	28.0	None..	38	—	37.0	28.0	Strawboard well.
June 25	112	Lafayette.......	1.9	.0001	.0800	.6276	.5200	23.4	Slt.....	6,100	—	46.2	42.4	River and well water; Strawboard Works.
June 25	113	Lafayette.......	1.5	.0001	.1000	.7196	.8600	18.8	Slt.....	3,600	+	46.6	29.4	Wabash River intake; Strawboard Works.
June 25	114	Lafayette.......	......	.0000	.10000	....	....	426.0	None..	1,000	—	104.2	32.4	Sewer effluent from Gas Works.
Aug. 1	450	Terre Haute....	2.0	.0065	.3000	.6203	33.2640	18.6	100	152,000	+	178.0	34.0	Sewer effluent; Com. Distilling Co.
Aug. 2	469	Terre Haute....	4.0	.0007	.5500	.0837	7.9200	48.4	70	180,000	+	62.6	44.6	Sewer effluent; Mer. Distilling Co.
Aug. 2	470	Terre Haute....	3.0	.0004	.2000	.0724	16.3220	22.0	70	225,000	+	64.4	54.0	Sewer effluent; Ind. Distilling Co.
Aug. 17	627	Vincennes......	7.0	.0050	.3000	.0677	157.0000	156.0	None..	368,000	+	598.8	390.6	Sewer effluent; Empire Strawboard Works.
Aug. 17	628	Vincennes......	9.5	.0030	.0200	.0335	5.8800	15.6	None..	220,000	+	89.8	71.8	Sewer effluent; Distilling Co.
Aug. 17	629	Vincennes......	5.5	.0025	.2000	.6850	17.5400	18.4	None..	160,000	+	132.0	83.0	Sewer effluent; Indiana Board and Filler Co.
Aug. 30	730	Mt. Carmel.. ..	3.6	.0042	.5500	.0210	21.4810	37.2	65	228,000	+	....	....	Sewer effluent from Strawboard Works.

LAFAYETTE STRAWBOARD WORKS.

The strawboard works at Lafayette is the largest single machine plant in the world and a special study of the work was made by J. C. Diggs, a member of the surveying party. Although the efficiency of this plant is greater than that of any of the others, the general method of operation is the same. The following is the report of Mr. Diggs:

In June, 1912, the members of the Wabash River Survey, in company with Prof. R. L. Sackett of Purdue University, made an inspection of the Lafayette Box-Board Works.

The pioneer days of all industries are marked by great waste of raw material and by-products. This is true of mining, lumbering and manufacturing. The straw-board manufacturing processes have proven no exception to this rule. In 1904 it was not unusual that the waste straw turned out was over 35 per cent. of the raw straw used. At the same time 560 pounds of lime were used for each ton of finished board, practically all of which was lost in the waste. The wasted material not only cut great inroads into the profit of the manufacturer, but disposal of the waste became a serious problem on account of its bulk.

The quantity and composition of this waste is such that it becomes a highly objectionable sewage. Waste matter containing large quantities of organic matter furnishes food for the multiplication of bacteria present in the stream. The quantities of suspended organic matter also interfere with the working of purification filters, with canning and packing industries, and to some extent with any plant using large quantities of water. It causes the water to become foul-smelling and distasteful, interferes with the growth and life of fish, and is a general menace to human life.

Due to the low cost of raw material, the development of the straw-board industry progressed comparatively slow. Competition and the increasingly insistent demand for stream purification by those in charge of public health affairs has, however, led to the adoption of more efficient machinery in the straw-board industry—more efficient, in that a greater portion of the pulp is used in board-making.

As a study in the straw-board industry evolution, a visit to the Lafayette Box-Board Company was of especial interest. Labor saving devices have supplanted the old-time hand processes. Special machines are installed to stop any leak of the raw straw pulp. Special processes are used to take the place of more expensive ones. All modern mechanical devices are used in the heat generation, steam generation and power transmission departments.

In the boiler room of this plant are automatic stokers, automatic water-feeding devices, and a machine for constantly determining the flue-gas composition.

Box-board is the pressed and dried pulp from the vats of straw, wheat or rye. The straw is steamed and treated with lime in rotaries in order to break down the cellulose fiber. This product is washed in a special machine. The lime is almost completely removed, and with it the finer particles of straw fiber. The pulp is then run into a vat, mixed with a large quantity of water and passed over a hollow cylinder having wire cloth surfaces. The water passes through and the pulp is collected on the face of the cylinder. It is then taken up by woolen belts which are pressed down upon the surface of the cylinder. This web of fiber is pressed between a long series of hot rollers, which press out the water and dry the residue. It is finally separated from its cloth support and goes to the trimming machine which cuts it into sheets of the proper size.

In some instances the box-board is surfaced on one or both side with stock paper. In this case a paste is used, small quantities of which may be found in the waste.

The plant at Lafayette is said to be the largest single machine plant in the world. The product is seventy-five tons of board per day. To make one ton of board 2,300 to 2,500 pounds of straw are used. Each day 280 bushels of lime and 160 of hydrochloric acid are used. The factory is run five days per week, in two shifts per day. One hundred men are employed each shift.

The factory work of the Lafayette Box-Board Company was carried out in an especially sanitary and cleanly manner and was free from many of the objectionable features of the usual paper mill.

In order to determine the amount and character of the factory wastes, samples of the water supply and sewer effluent were taken. The water supply consisted of a mixture of deep well and river water. The analyses are given in Table 13, laboratory numbers 109 and 112. By these analyses we see that the total solids increase approximately 800 parts per 100,000. The increase of mineral matter, or fixed solids, is 328 parts per 100,000. By calculation the organic matter increases 486 parts per 100,000. The estimated effluent of this factory was 1,500,000 gallons per day. By the use of these figures the organic matter thrown into the river each day would total 60,000 pounds, or approximately thirty tons. The mineral matter added by this factory is slightly over twenty tons. The alkalinity of this volume of water added changes from 23.4 to 70. The sewer effluent is entirely devoid of dissolved oxygen. The factor for oxygen consumed changes from .52 to 17.05. From the results of these analyses we are not able to agree with the manufacturer that the waste of straw has been reduced to a minimum. This volume of organic matter interferes materially with the sanitary conditions of the water of the river for many miles below Lafayette.

Complaints of residents below the Lafayette Box-Board Works regarding the stench of this decomposing straw verify the analysis in the point that the sewage from this plant is exceedingly objectionable.

Although the amount of waste may have been lowered to a very great degree in the past, for the sake of sanitation it should be decreased to a greater extent, or some other means of disposal devised.

TYPHOID FEVER.

The value of statistics to assist in the determination of the condition of the water is recognized as most important. When a study is made of the many typhoid cases and typhoid death records of periods before and after the introduction of a filtered or treated water, the reduction in the typhoid fever and other water-borne disease mortality, is very marked.

TABLE 14.

TYPHOID FEVER STATISTICS IN CITIES AND TOWNS ALONG THE WABASH RIVER.

City or Town.	Year.														
	1908.			1909.			1910.			1911.			1912.		
	P.*	D.†	R.‡	P.	D.	R.	P.	D.	R.	P.	D.	R.	P.	D.	R.
Bluffton	4,835	0	0	4,375	0	0	4,375	5	114.3	4,375	1	22.9	5,037	3	59.5
Huntington	11,047	6	54.3	9,936	2	20.1	9,936	2	20.1	10,272	1	9.8	10,350	1	9.7
Wabash	9,944	4	40.3	8,592	3	34.9	8,592	2	23.3	8,687	2	23.0	8,693	2	23.0
Peru	11,648	2	17.2	10,517	4	38.5	10,517	6	57.2	10,910	19	173.8	11,154	3	26.9
Logansport	17,932	8	44.6	16,730	7	41.3	16,730	9	53.8	19,050	2	10.5	19,334	16	82.8
Delphi	2,220	0	0	1,725	1	57.9	1,725	1	57.9	1,725	0	0	2,163	0	0
Lafayette	19,238	8	41.6	20,223	11	54.4	20,223	10	49.4	20,081	5	24.9	20,277	5	24.7
Attica	3,279	0	0	2,989	0	0	2,989	0	0	2,989	0	0	3,368	0	0
Covington	2,342	0	0	1,974	0	0	1,974	2	101.3	1,974	1	50.6	2,069	2	99.5
Clinton	3,539	1	28.3	4,508	2	44.4	4,508	1	22.2	6,229	0	0	6,560	1	15.3
Terre Haute	52,805	19	34.5	51,135	35	68.5	51,135	18	35.2	58,157	18	30.9	60,305	20	33.2
Vincennes	11,393	3	26.4	13,947	4	28.7	13,947	4	28.7	14,895	4	26.9	15,359	5	32.5

*Population (taken from State Board of Health Monthly Bulletins).
†Deaths.
‡Death rate per 100,000.

Table 14 gives typhoid fever statistics in cities and towns along the Wabash River for a period of five years. The population, number of deaths, and the death rate per 100,000 for each city and town where these figures were available, are given.

At Bluffton, in 1908 and 1909, there were no deaths, but in the three following years, the average rate was extremely high, it being 65.6. The water supply is taken from deep wells, but there is a connection between the river and water-works reservoir, as is evidenced by the turbidity produced in the reservoir water when a rise in the river causes an elevation higher than that in the reservoir. The river and the reservoir have the same rock bottom.

At Huntington the average rate for the five years was 22.8; the first year of this period it was 54.3, and this raised the average. For the last two years the rate was 9.8, a relatively low figure.

The average rate at Wabash for the five years was 28.9, which, although a fair average for our American cities, is very much higher than it should be. The rate for the last three years was 23.

The figures at Peru indicate a condition which should be carefully investigated. The average for the period was 63.1. In one year, 1911, the rate was 173.8. The drinking water is undoubtedly the source of infection, and it would be advisable to have analyses made of all the wells, public and private, in the city, and to condemn and fill all that are unfit for use.

For several years an active campaign has been waged against impure water at Logansport. Many wells have been analyzed and the city water is examined at regular periods. The city supply is drawn from Eel River and is pumped, without treatment, to the consumer. One analysis after another has shown that the supply was dangerous, but not until a serious typhoid epidemic in the spring of 1912 were any active steps taken toward an improved supply. A filtration plant is to be installed in the near future.

The average death rate for the last five years was 46.5 per 100,000. In 1912 it was 82.8. When the filtration plant is constructed and in operation, a decided fall in the death rate can be looked for.

In 1908, 1911 and 1912 there were no deaths at Delphi, although two deaths, one in 1909 and one in 1910, made an average rate for the five years of 23.1.

Lafayette has a death rate of 39.5 for the five-year period.

Attica had no deaths from typhoid during the period.

The first two years of the period there were no deaths from typhoid in Covington, but the deaths for the last three years make the average rate for the five years, 50.3 per 100,000.

Clinton, drawing its water supply from deep wells, has a fairly low death rate, the average for the five-period being 21.6.

Terre Haute and Vincennes use filtered Wabash River water. The average death rate at the two places for the last five years was 40.5 and 28.6 per 100,000 respectively. With the exception of one year, 1909, at Terre Haute, when the death rate was 68.5, the variation in the yearly rate, is not great.

Many wells are in use in all the cities. In many of the cases, these wells are responsible. In a sanitary survey of the water at Terre Haute analyses were made by senior students of Rose Polytechnic Institute on thirty-two wells. Their conclusions are as follows:

> "As a whole, the sanitary conditions existing throughout the territory covered, were not very good. In many cases, waste water of every description was thrown in the immediate vicinity of the well. Very few pumps were provided with drain pipes, thus allowing offal to be washed through the well covers into the dug portion below. As most of the wells were dug from eight to ten feet below the surface and then drilled, the above drainage collected in the pit, thus offering possibilities of contamination. Another source of pollution, generally regarded as the most important, is the underground drainage from cesspools and vaults."

Eleven analyses were made of well water at Terre Haute on this survey. The results of these analyses are given in Table 21. Six were found to be badly polluted, two doubtful and but three or 27.3 per cent., good. The use of the well water undoubtedly accounts, in part at least for the high typhoid death rate at Terre Haute, and it is safe to say that the situation is similar at the other cities visited. The city supplies were found, with one exception, to be of good quality, and when active sanitary measures are adopted and all polluted wells are abandoned, a reduction of typhoid will follow.

THE COLLECTION OF SAMPLES.

The depth of water in the upper portion of the river necessitated the use of a rowboat in the collection of samples. From Bluffton to Lafayette, a distance of 130 miles, the trip was made in a rowboat. About a dozen samples were collected at each of the cities, one river sample above all sources of pollution, several along the city proper, and one or two below all points of contamination. Two samples were also taken of the city supplies. As soon as collected, these samples were put upon the interurban cars and sent to the house-boat laboratory at Lafayette. The time of their arrival was telegraphed to the chemist on the house-boat in order that the samples would not stand in the express office. Although an immediate analysis, such as was made on samples from Lafayette to the mouth of the river, could not be made, this method was the best that could be used under the circumstances, and the results appear to be consistent.

At Lafayette more samples could be handled, as the house-boat laboratory and necessary equipment was at hand. Here sampling points were established and several sets collected over a seven-mile length of river. At different cities and towns where stops of any length were made, similar sets were collected. At Terre Haute, where the longest stop was made, seven sets, of fifteen samples each, were collected along the river. Other points where sets of samples were collected were Covington, Montezuma, Vincennes and Mt. Carmel.

The maps of the river that were available were not sufficiently accurate to assist in the location of sampling points. The distances given between sampling points and the cities and towns were estimated. For this purpose, maps, the distances by rail between cities and towns, and the help given by river men, were used.

Other river samples were also collected. At different points several samples across a section of the river were taken. Samples were also taken at different depths. At least two samples were also taken at all cities where public water supplies were in use and where possible well waters were analyzed.

The effluents from all sewers, both domestic and manufactural, were collected. Analyses of all tributary waters were also made. Complete analyses, chemical and bacterial, were made on 823 samples. Six hundred and ninety-seven of these were from the Wabash River, 39 from tributaries, 60 from cities and towns, 27 from sewers, domestic and manufactural. In addition to samples upon which complete analyses were run, 132 samples were collected on which only the determination of chlorine and alkalinity were made.

ANALYSIS OF WABASH RIVER SAMPLES.

Complete analyses were made on 697 river samples. This number consisted of 601 samples taken at sampling points along the river, 88 samples taken in sets of from three to five each across a section of the river, and 8 samples in two sets at varying depths of the river. One hundred and thirty-two samples, in sets of 12 each, were taken across a section at different points along the river.

As the survey covered a period of three months, and during that time the river gauge was constantly changing, causing a variation in the chemical and bacterial content, a chart showing the composition for the entire length of the river would be of little value.

At six points, however, where stops of a few days were made, several sets of samples were collected. These charts, numbers 4 to 27, inclusive, cover the chlorine, oxygen consumed, dissolved oxygen and bacteria per cubic centimeter at each of the six points.

At Lafayette the charts cover a distance of six miles, four above and two below the city. The analyses made at Lafayette covered a period of six days, during which four sets of samples were taken. The chlorine content, Chart 4, on each day's test varied but little. During this period, however, there was a fall in the river of from 5.5 feet to 2.2 feet, and the chlorine varied from around six parts per 100,000, when the river was high, to between one and two parts per 100,000. The oxygen consumed, Chart 5, shows that while the river was high and the sewers were being washed out at Lafayette, there was a noticeable increase. It is also noticed that when the river was high, the oxygen consumed was highest. The average of the four sets shows a slight increase in oxygen consumed below Main-street bridge at a point below the entrance of a large quantity of the sewage. The dissolved oxygen is shown in Chart 6. Very little variation is shown in the four sets of samples, the average for them lying between .7000 and .8000 parts per 100,000, a point well above the possibility of a nuisance.

Chart 7 shows the bacteria per cc. covering the same sampling points. There is very little variation in the bacteria in the four miles above the city. A variation commences at the Brown-street bridge and from that point to one mile below the strawboard works, the bacteria counts are very erratic, showing the effects of the entrance of sewage at the bridge and below that point. The one thing noticeable in the bacterial samples was this variation in count. Although the samples were taken at approximately the same point for each set, the counts were not uniform.

At Covington four sets of samples were collected over a distance of six miles, two above Covington and four below.

The river stage was nearly uniform during the days of sampling, varying from 1.8 to 3.4 feet. The chlorine content, Chart 8, varied but little, the average for the four sets being a little less than two parts per hundred thousand.

The oxygen consumed, Chart 9, showed a wide variation for the samples collected. At the sampling point two miles above the town, the oxygen consumed content was practically the same at all times, being a little less than .7000 parts per 100,000. Very little sewage, none of which was noticeable, enters the river at this point, and therefore would not account for the wide variation. The entrance of sewage would increase the oxygen consumed, and the chart shows that the average below Covington drops rather than increases.

The dissolved oxygen, Chart 10, as was the case at Lafayette, showed but little variation on the four sets of samples, the average being about .8000 parts per 100,000, which showed that the river was in a very satisfactory condition at this point.

In Chart 11 the bacteria also differ widely in the counts for the four days. On July 6th the two samples taken one mile above and at Covington show counts above 10,000, slightly increasing the average at these two points. One mile below Covington, where one would look for an increase in the average bacteria counts, there is a drop. Three of the sets taken one and one-half miles below Covington are nearly uniform, the counts being between 3,000 and 4,000. One of the counts, however, taken on July 8th, was 40,000, and this brought the average up to 12,600. If this rise was due to the entrance of sewage and other wastes, the average would not drop as it does at the two and the two and one-half-mile sampling points.

Sampling points at Montezuma were established every few miles, covering a distance of two miles above and three miles below the town. Four sets of samples, covering a period of six days, were collected. During that time the river varied between three and one-half to ten and seven-eighths feet. The second set of samples, collected on July 16th, when the river stage was at its highest, had the greatest amount of chlorine in the water. Between the one and one-half and two-mile sampling points Raccoon Creek enters, and the variation in the oxygen consumed is thus accounted for.

The chlorine in Chart 12 shows a similar behavior as that in the samples taken at Lafayette, that is, when the river was highest and bringing down with it large quantities of organic matter, the oxygen consumed was highest. The average of the four sets of samples show no rise in the samples below Montezuma, indicating, as one might expect, as there are no sewers at this point, that waste in appreciable quantities enters the river here. On July 13th, when the stage was lowest, the chlorine content was the least. In the samples taken on July 18th and 19th, when the river stage was five and eight-tenths and six feet, the chlorine content was found to be about the same. The average of the four sets shows a chlorine content of a little less than two parts per 100,000 for the entire sampling distance. The behavior of the chlorine content, that is, an increase in the chlorine with an increased river stage, corresponds to the conditions prevailing at Lafayette at the different stages.

The dissolved oxygen shown in Chart 14 varies but little in the amount of oxygen in the water, the average being about .7000 parts per 100,000, a figure which insures a satisfactory condition of water.

The bacteria per cc, Chart 15, shows a fairly uniform bacteria content until the point two miles below Montezuma is reached, where the count jumps to 72,000. In the set of samples of July 13th, the two and one-half and three-mile sampling points for the same day show counts of 40,000 and 28,000 respectively. These high counts are no doubt due to a washout of Raccoon Creek which empties into the Wabash a short distance above the two-mile sampling point.

At Terre Haute a ten days' stop was made, during which time seven sets of samples were collected. These samples were collected every half mile for a distance of three miles above and four miles below the city proper. During the stop at Terre Haute the river gauge varied between one and two-tenths and four and eight-tenths feet.

One noticeable thing in the chlorine content, Chart 16, was the contrast when compared with the charts at the other sampling points. On August 5th, and when the river was at its lowest, the chlorine content was the highest, which result is just the opposite from that obtained at Lafayette and Montezuma. But little variation is found in the chlorine content for the whole period of work at Terre Haute. The average for the seven sets of samples was between one and two parts per 100,000, and the greatest variation was a little over one part per 100,000.

Chart 17 shows the oxygen consumed in the river at Terre Haute. The average for the seven sets of samples for the length of river covered is between .7000 and .8000 parts per 100,000, and the greatest variation from this figure is about .1800 parts per 100,000.

Chart 18, giving the dissolved oxygen at Terre Haute, shows a drop below .6000 parts per 100,000 in but four of the 105 samples collected, and in but one of the four was this drop below .5000 per 100,000. The average dissolved oxygen in the river at this point lies between .7000 and .8000 per 100,000, a figure which would indicate that the water was satisfactory at the river stages encountered. It might be stated here that difficulty was experienced in finding the outlets of the different sewers, as strangely enough the city engineer did not have this information at hand, and an outlet of one of the largest of the sewers was found to be a couple of miles below the last sampling point. The samples collected below Terre Haute show the influx of sewage and waste, which would have a greater variation on the charts if they had been continued below the four-mile sampling point.

Chart 19, giving the bacteria per cc., shows but little variation; the average for the seven sets of samples lying between 3,000 and 4,000 and all counts being between 2,000 and 5,000.

At Vincennes, three sets of nine samples were collected over a distance of four miles, two miles above and two miles below Vincennes proper. Over a period of four days during this time there was a variation in the river stage of but 1.1 feet. The variation in the chlorine content, Chart 20, is not over one part per 100,000 from the average, which lies between two and three parts per 100,000.

In Chart 21, showing the oxygen consumed, there is but little variation from the average of the three sets, which lies between .7000 and .9000 parts per 100,000.

There is a wide variation in dissolved oxygen, Chart 22, in the three sets of samples. With the lowest river stage, 2.8 feet, the dissolved oxygen is less than .3000 parts per 100,000, and with the two higher stages, with but two exceptions in the eighteen samples, it is above .7000. The average of the three is uniform for the length of river investigated lying around .6000 parts per 100,000. In the list of samples for August 19th, those below .3000 parts per 100,000 approach a point where the discharge of sewage in large amounts would soon become a nuisance.

Bacterial Chart 23, shows high counts in the samples on August 15th, taken at the time when the river was at its highest point. The bacteria counts in this one set materially increases the average for the three sets at several of the sampling points. It appears that the bacteria seemed to prevail in pockets, and uniform counts cannot be looked for when large amounts of sewage and waste are being washed into and down the river. Two sets of samples, those taken on August 17th and 19th, show the bacteria count fairly uniform at all the sampling points. At the point one mile below there is a decided rise in the counts above these of the half-mile point. At the mile and one-half point, there is a decided drop, and at the two-mile point, another rise. These two sets of samples were taken two days apart.

At Mt. Carmel, Ill., four sets of samples were collected, beginning at a point one and three-fourths miles above and extending one and one-half miles below the city proper. The river stage varied between three and four and six-tenths feet for a six days period during which the samples were collected.

The three sets of samples taken on August 27th, 28th and 29th show that the chlorine content, Chart 24, is fairly uniform, and that it is but little influenced by the influx of the water from the White and Patoka rivers. The chlorine in the water of White River is about one-half of the amount found in the Wabash River, while the one sample from the Patoka River, was higher than the average in the Wabash. The chlorine in the samples taken on August 23d deviates greatly from the other sets. On this day the river was the highest and was receiving large amounts of waste from the gas and oil wells in the immediate region, which was being washed into the river by the heavy rains. When the samples were being collected on that day it was observed that the waters from the White and Wabash rivers did not mix. The sample collected at the one-half mile point above on that date was taken in the clear waters coming in from White River. In the collection of samples the attempt was made to collect them in the main channel of the river, but in this case the waters from White River extended a considerable distance into the Wabash River before mixing.

The oxygen consumed, Chart 25, shows but little variation from the average, which lies between .7000 and .9000 parts per 100,000 the entrance of the waters from White and Patoka rivers having no visible effect.

In Chart 26, showing the dissolved oxygen, there is not much variation in the different samples, the majority of which show an oxygen content between .7000 and .8000 parts per hundred thousand, a safe figure as regards the quality of water from a sanitary standpoint.

In all the samples taken at this point, the bacteria counts shown on Chart 27 lie betwen 2,000 and 4,500 bacteria per cc., the average lying between 2,500 and 3,500.

A general review of the analytical data shows but little variation in the chemical contents of the waters. Table 15 gives the chemical and bacterial analyses of the samples from the Wabash River. All chemical data is recorded in parts per 100,000.

Because of the waste from the gas and oil wells, discharged into the river at Bluffton, the chlorine was much higher there than at any other point, being 22 parts per 100,000. At Lafayette, a distance of 134 miles below Bluffton, it was about three parts per 100,000. The gradual decrease in the chlorine content between Bluffton and Lafayette is due to the additional dilution entering at different points. The river stage during the period covering this part of the trip was between two and three feet. At two points on the river, Lafayette and Montezuma, a sudden rise in the river caused a decided increase in the chlorine content. At Lafayette a rise of 3.3 feet caused the chlorine to jump from 2.6 to 5.8 parts per 100,000. At Montezuma a rise of 7.2 feet caused an increase of 1.6 parts, being more than double the amount after the rise. These rises brought the high cholorine content from the head waters and caused the greater part of this increase. Some of it was due to the washing of the drainage area. The work on the Ohio River showed a corresponding increase with the rise in the river but it was slight in comparison with the variation found in the Wabash River, the head waters of which are in an oil and gas region. During the period when the river stage was practically uniform the chlorine content varied but little, being between .8 and 3.6 parts per 100,000.

Nitrates changed but little in any of the samples collected, being between .0000 and .0004 parts per 100,000. Nitrites varied between .0000 and .5000 parts per 100,000.

Very little change occurred in the dissolved oxygen content. Although figures show that this variation is between .2120 and .9890 parts per 100,000, the average of all samples would approach the higher figure, there being but 16 samples showing less than .6000 parts per 100,000. These figures would show that at no point is the water in danger of becoming a nuisance at the river stage recorded with the data, as there is plenty of oxygen present to carry on the oxidation of organic matter. It should be stated, however, that the river stage during the trip as shown on the river stage, Chart 3, was above normal for most of the summer.

The oxygen consumed content varied between .1505 and 3.6848 parts per 100,000. The high figures occurred at Lafayette, Montezuma, Vincennes and at points between cities, and they generally followed a rise in the river. One might expect a rise in the oxygen consumed at and below Terre Haute because of the immense amount of waste discharged at that point, but the figures at that point only showed a variation between .6070 and .9420 parts per 100,000. This indicated that the river at and below Terre Haute was not markedly polluted.

When the river was around a two-foot stage, the alkalinity was about 20 parts per 100,000, giving a variation between 11.0 and 25.2 parts per 100,000. A heavy rain and rise in the river caused a drop in the alkalinity similar to that which followed a rise in the Ohio River as shown on charts made on a survey of that river in the summer of 1911.

The bacteria content in the river water was fairly uniform from Bluffton to Lafayette, varying between 100 and 6,000 bacteria per cc. One exception to this was just below Logansport, where a count of 25,000 was made. Betwen Lafayette and Attica the counts reached as high as 98,000 bacteria per cc, showing the results of discharging large amounts of wastes at Lafayette.

Between Attica and Terre Haute there was but fourteen counts above 10,000 bacteria per cc. These varied between 10,000 and 90,000 bacteria per cc. An abnormal count is frequently made on a river water, for which there is no plausible explanation. Many high counts are found on individual samples, although samples taken at points above and below are normal and all other factors are practically the same; that is, there are no tributaries or other influencing factors entering.

In the 601 samples analyzed, but 25 gave a negative result on the presumptive test for B. coli. Of this number but three were found below Logansport and they were at Lafayette. This clearly shows the danger of using river water in its raw state for drinking and domestic purposes.

An interesting chart, No. 28, was made from data obtained from the Terre Haute Water Company. It shows the turbidity, bacteria per cc. and B. coli. in the river water at Terre Haute recorded daily in 1912. Each rise in the river is followed by an increase in turbidity, and the bacteria per cc. are influenced by these rises. The relation between the bacteria and turbidity is shown on the chart. In the first three months of the year, a rise in turbidity is followed by a corresponding rise in bacteria, and a fall in turbidity by a fall in bacteria. In January a comparison of the two curves shows that a slight increase in the turbidity results in a great increase in bacteria. In February the difference is not so great. The difference gradually diminishes until in May, a rise in the river with an increase in turbidity does not give the corresponding increase in bacteria. In June, July and August we do not find a great increase in bacteria following increased turbidity.

A chart showing the bacteria per cc. in the Ohio River showed a corresponding increase of bacteria with a rise in the river, but it does not cover a period sufficiently long to make it of value for comparative purposes.

At seven points on the survey special samples, in sets of from three to five each, were collected. The results are given in Table 16 as cross-river samples. This was done to determine the difference chemically and bacterially throughout a section of the river. The samples at Lafayette were collected at one point, five of them being taken across the river just below the Big Four Railroad bridge. Considerable sewage comes in on both sides of the river above this point. The chlorine differs considerably, being less in the middle of the stream than at either side. The course of the sewage if it hugs the banks would account for the higher chlorine. The bacteria counts in the middle of the stream were very much lower than along either bank. The sewage from West Lafayette was responsible for the high count of 400,000 bacteria per cc., as it enters at a point 300 feet above the sampling point. On the east bank the counts were 22,000 and 24,000, but the sewage from Lafayette on this side enters at several points above and the river is considerably polluted before reaching these sampling points.

At Attica three samples were taken. The greatest difference in the chemical factors was in the oxygen consumed, which was much higher on either bank than in the middle of the stream. The bacteria counts along the banks are about the same at both sampling points, but the counts in the middle of the river are very much higher. This was due to the swift current in the center carrying with it large amounts of sewage and wastes distributed at Lafayette.

At Covington two sets of four samples each were collected across a section of the river at a point one mile below the town proper. As very little sewage enters the river at this point and considerable distance has been covered by the river water since receiving any great quantity of waste, it was found that both chemical and bacterial factors showed but little variation.

At Montezuma four sets of five samples each were collected on two different days. One set was collected at a point one mile above Montezuma, and the other two miles below. All the samples collected on each day differed but slightly in chemical and bacterial content. The greatest variation in the sets taken on the two days was due to the change in the stage of the river.

On July 17th the river stage was 3.7 feet, and this was carrying with it considerable organic matter which is shown by the high oxygen consumed content, this being the only factor that shows any considerable deviation.

Six sets of samples of five each were collected on two different days, July 25th and 30th, at Terre Haute. These were taken at points one mile above the pumping station, at the Wabash-street bridge, and one mile below the Wabash-street bridge. The river stages for these two days were 5.9 and 2.5 feet, but the difference had little effect upon the chemical and bacterial content of all the samples taken on the two days, and there was but slight variation in the contents of the different sets.

At Vincennes, two sets of five samples each were taken on August 16th. One of them was taken at a section of the river 500 feet above the water-works intake. The analyses of these samples show a practically uniform content throughout the cross-sections at the two points.

At Mt. Carmel, Ill., two sets of five samples each were collected on August 24th, one set 2,000 feet below the mouth of White River, and the other 100 feet above the railroad bridge. The chlorine content shows the only variation of any consequence in the first set of samples. The three samples taken near the Illinois or west bank contained but very little of the White River water. Those taken near the Indiana bank contained practically all White River water, there being very little mixture between the waters of the two rivers at this point, as indicated by the analytical results. There was a slight increase in oxygen consumed in the samples taken on the east bank, which consisted mostly of White River water. In the second set, the same thing occurs. The chlorine content along the Indiana bank is about the same as in the first set, but between the second sample from the Indiana bank and the third, there is a slight mixture of the waters. The remaining chemical and bacterial contents of the waters are practically the same.

As there had been considerable variation in samples from one sampling point to the next, an endeavor was made to ascertain the cause. With this in view, eleven sets of samples of twelve each were collected at different points across the section of the river on which the chlorine and alkalinity were run. The results are given in Table 17. Most of these sets showed but little variation. In set two, taken at the water works at Terre Haute, there was a variation in the chlorine of .8 parts per 100,000. This was above all sewer outlets, and sewage was therefore not accountable for this difference. In set three, taken the next day at the same point, there was a variation of 6 parts per 100,000 in the chlorine and 2.2 parts in the alkalinity. In the set taken at Riverton a variation of 1.2 parts per 100,000 in alkalinity and .4 parts per 100,000 in chlorine was found. There were no sewers here nor for many miles above this sampling point. At Vincennes two sets of samples were collected, and the greatest variation found was .6 parts per 100,000 in the alkalinity and .2 parts in the chlorine in the first set taken above all points of pollution and .6 parts in the alkalinity and .3 parts in chlorine taken below two sewer outlets.

At Mt. Vernon, Ill., two sets of samples were collected, one 2,000 feet below White River and the other 300 feet below the railroad bridge. In the first set there was a difference of 1.6 parts in the alkalinity and .7 parts in the chlorine. This showed less difference than the other set of five samples at the same point taken three days before. The second set taken below the railroad bridge was below the mouth of Patoka River as well as White River. In this set a difference of 3.2 parts per 100,000 in alkalinity and one part in chlorine was found.

Another set was collected fifteen miles below Mt. Carmel. At this point the waters from these rivers entering at Mt. Carmel should have been thoroughly mixed, but a great variation was found here. The alkalinity content varied by 1.7 and the chlorine by one part per 100,000. Another set was collected at Grayville, Ill., at which point both the alkalinity and chlorine content varied but little. Another set was collected at New Harmony, in which there was but little variation in these factors.

All these analyses showed that variations existed at points not affected by sewage and wastes emptying just above sampling points. In some cases taken below the sewer outlets a slight variation was found, and in others taken below these outlets, a marked difference was shown.

Samples taken at points many miles below the entrance of sewage or tributaries showed practically the same variation as was experienced just below the mouths of sewers or tributaries. It may be that the variation is caused by the wastes or other influencing factors running in pockets or in small streams in the rivers themselves.

Two other sets of samples which seem to bear out the above statement were taken at Mt. Carmel in sets of four each at two points, one 2,000 feet below White River and the other 100 feet below the railroad bridge. They were taken at varying depths, and the results of the analysis are given in Table 18. That is, four samples were taken at one point, at the surface, four feet, eight feet and twelve feet below the surface. In the first set a variation of .6 parts per 100,000 was found between the surface sample and the one taken twelve feet below. At the intermediate points the chlorine content was 1.2 parts per 100,000, which was .2 more than found in the one twelve feet below and .4 parts less than found in the surface sample. A variation in the bacteria content was found, the content being more at the surface and decreasing uniformly until a difference of 1,600 bacteria per cc. between the surface and lowest sample was noted. In the second set, those taken in White River, the chlorine content was found in just the reverse order, the sample taken twelve feet below the surface having .5 parts more than that at the surface. In the same water the bacteria count showed a uniform decrease from the surface to the deepest well. A difference of 600 bacteria per cc. was found. These sets of samples appear to confirm the statement made above that there is no uniformity of composition to be expected, because of pockets or currents carrying varying contents both chemically and bacterially.

Fifty samples were carried through for a positive B. coli test, on which, as shown in Table 19, these tests consisted of fermentation in lactose and dextrose broth, agar culture, liquefaction of gelatin, growths in the fermentation tube and the indol reaction and nitrite reduction. At but one city, Logansport, the positive tests were found in the samples from the city supply. In all the river samples from Bluffton, the beginning point of the survey, to the samples taken below New Harmony, these tests indicated the presence of B. coli.

Fourteen samples, the analyses of which are given in Table 20, were collected from sewers and in addition to the regular chemical and bacterial analyses the total and fixed solids were determined.

SAMPLES FROM CITIES AND TOWNS.

At all cities in Indiana samples from the public supply, and in a few cases well samples, were analyzed. With but one exception, all the public supplies could be classed as satisfactory. The exception was Logansport, where an extremely high count and positive B. coli were present in two of three samples. One of the samples taken at Wabash had a high count of 1,260 bacteria per cc., but in this case the chemical factors were good and B. coli negative.

At Terre Haute eleven well samples were collected and of these, six were found to be polluted and unfit for drinking and domestic purposes, two of them were found to be of doubtful quality and but three satisfactory for drinking and domestic purposes. At New Harmony, three wells out of six examined were found to be unsatisfactory for drinking and domestic purposes, one was of doubtful quality and two, good.

These analyses show that the public supplies in all cities and towns with the exception of Logansport, are in a very satisfactory condition. Where wells were examined, it was found that the majority of them were not fit for use.

SAMPLES FROM WABASH RIVER TRIBUTARIES.

Samples were collected from all tributaries, both rivers and creeks. The results of analyses are given in Table 22.

The chemical factors in nearly all samples were satisfactory from a sanitary standpoint. One sample from Little River showed a nitrite content of .0006 parts per 100,000. The sewage from Huntington enters the river about one and one-half miles above the mouth. A creek near Merom and Embarras River have a chlorine content of 28.4 and 14.4 parts per 100,000 due to the wastes from oil wells. Big Ditch at Vincennes had a chlorine content of 35.0, but this creek was an open sewer which carried the greater part of the sewage of Vincennes.

In but two of the thirty-nine samples were B. coli absent in the presumptive test. One of the two samples was from Little River below Huntington. The bacteria count was 4,900, which was comparatively low for a sampling point just below sewer outlets. The second sample was from Fall Creek, which received the sewage from Williamsport. In this case, however, the bacteria count was very high, being 231,000.

The sample from Honey Creek, at Logansport, has B. coli present, and a count of 36,000. This is exceptionally bad, because this creek flows into Eel River above the dam and consequently into the water supply of Logansport.

The highest bacteria count found in a tributary was in Big Ditch at Vincennes, but this, as has been stated before, carries domestic sewage and manufacturing wastes.

As most of the rivers and creeks drain considerable area and receive quantities of waste which is but little diluted, the bacteria counts are not higher than might be expected.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

Parts per 100,000.

DATE.	Laboratory No.	Sampling Point.	CHEMICAL.							BACTERIAL.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
June 5.....	1	Bluffton.............	22.0	.0000	.0001	.8016	.7557	22.4	Slight.	2,900	–	2.67	Lower end of Island, one-half mile above waterworks.
June 5.....	2	Bluffton.............	22.0	.0001	.0000	.8474	.6850	22.4	Slight.	3,700	–	2.67	Foot of Washington street, opposite waterworks.
June 5.....	3	Bluffton.............	22.2	.0001	.0000	.8264	.6558	23.2	Slight.	6,700	–	2.67	Foot of Market street, above sewer; 600 feet below number 2.
June 5.....	5	Bluffton.............	22.2	.0001	.0500	.7191	.5556	20.0	Slight.	2,300	–	2.67	900 feet below number 4.
June 5.....	6	Bluffton.............	22.2	.0001	.0500	.8183	.5375	23.6	Slight.	1,000	–	2.67	Main street bridge, 600 feet below number 5.
June 5.....	7	Bluffton.............	22.4	.0001	.0000	.6764	.6466	23.2	Slight.	3,100	+	2.67	Below sewer, 500 feet below number 6.
June 5.....	8	Bluffton.............	22.4	.0001	.0000	.7411	.6921	23.2	Slight.	4,100	+	2.67	300 feet below railroad bridge, 700 feet below number 7.
June 5.....	9	Bluffton.............	23.8	.0001	.0000	.6597	.5375	24.0	Slight.	5,500	+	2.67	L. E. & W. bridge, 1,000 feet below number 8.
June 5.....	10	Bluffton.............	23.0	.0000	.0000	.7338	.5466	23.2	Slight.	4,800	–	2.67	C. P. & C. bridge, 600 feet below number 9.
June 6.....	13	Huntington..........	14.8	.0000	.0000	.8247	.5374	24.4	Slight.	1,700	–	2.50	2,000 feet above waterworks.
June 6.....	14	Huntington..........	14.6	.0000	.0000	.8247	.5193	24.4	Slight.	1,500	–	2.50	Opposite waterworks.
June 6.....	15	Huntington..........	14.8	.0000	.0000	.7591	.5193	24.4	Slight.	2,100	–	2.50	1,000 feet below waterworks.
June 6.....	16	Huntington..........	14.6	.0000	.0000	.7096	.5648	24.4	Slight.	400	–	2.50	Mt. Etna avenue bridge, 2,000 feet below number 15.
June 6.....	17	Huntington..........	14.4	.0000	.0000	.7591	.4920	24.0	Slight.	1,000	–	2.50	1,900 feet below number 16.
June 6.....	18	Huntington..........	14.4	.0000	.0000	.7591	.4638	22.4	Slight.	1,800	–	2.50	100 feet above mouth Little River, 600 feet below number 17.
June 6.....	20	Huntington..........	11.8	.0001	.0000	.7458	.4546	23.4	Slight.	2,100	–	2.50	Opposite Country Club, 500 feet below Junction.
June 8.....	25	Lagro...............	20.5	Trace.	.0000	.7432	.6203	23.6	Slight.	1,120	–	2.00	Lagro, Indiana, 800 feet above bridge.
June 8.....	26	Lagro...............	19.6	Trace.	.0000	.7711	.5739	24.4	Slight.	420	–	2.00	200 feet below bridge.
June 8.....	27	Wabash.............	20.6	Trace.	.0000	.8010	.5503	23.7	Slight.	688	–	2.00	200 feet below Island, 1,200 feet above Big Four bridge.
June 8.....	28	Wabash.............	19.0	Trace.	.0000	.7419	.6167	24.0	Slight.	1,400	–	2.00	Beneath Big Four bridge.
June 8.....	29	Wabash.............	18.6	Trace.	.0000	.7683	.7195	23.0	Slight.	1,300	–	2.00	600 feet below number 28.
June 8.....	30	Wabash.............	18.6	Trace.	.0000	.7683	.6467	24.0	Slight.	800	–	2.00	400 feet below public bridge, 1,600 feet below Big Four bridge.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued.)

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli Presumptive Test.		
June 8.....	31	Wabash.............	19.4	Trace.	.0000	.7796	.5466	23.6	Slight.	2,000	–	2.00	Second public bridge, 1,000 feet below ice plant.
June 8.....	32	Wabash.............	19.1	Trace	.0000	.8183	.5921	24.0	Slight.	2,200	+	2.00	800 feet below second public bridge.
June 8.....	33	Wabash.............	18.8	.0002	.0000	.6774	.7377	23.6	Slight.	8,800	+	2.00	1,000 feet below number 32.
June 8.....	38	Peru................	15.7	Trace.	.0000	.7796	.5183	24.4	Slight.	540	+	2.00	1,500 feet above C. & O. bridge.
June 8.....	39	Peru................	15.0	Trace.	.0000	.7730	.5739	25.2	Slight.	1,004	+	2.00	600 feet above C. & O. bridge.
June 8.....	40	Peru................	15.6	.0001	.0000	.7683	.5639	25.6	Slight.	900	+	2.00	200 feet below C. & O. bridge.
June 8.....	41	Peru................	15.8	.0001	.0000	.6847	.4739	25.2	Slight.	200	+	2.00	100 feet below concrete bridge.
June 8.....	42	Peru................	15.8	.0001	.0000	.7933	.4374	24.8	Slight.	100	+	2.00	600 feet above Broadway bridge
June 8.....	43	Peru................	15.4	Trace.	.0000	.7542	.5375	25.2	Slight.	500	+	2.00	Beneath Broadway bridge.
June 8.....	44	Peru................	16.2	Trace.	.0000	.8351	.4920	25.2	Slight.	100	+	2.00	800 feet below number 43.
June 8.....	45	Peru................	16.0	Trace.	.0000	.7983	.5284	24.2	Slight.	1,200	+	2.00	800 feet below number 44.
June 8.....	46	Peru................	16.0	Trace.	.0000	.7933	.5557	25.2	Slight.	2,500	+	2.00	1,400 feet below number 45.
June 8.....	47	Peru................	16.2	Trace.	.0000	.7609	.5102	25.2	Slight.	1,200	+	2.00	100 feet below C. & O. shops.
June 15.....	48	Logansport..........	14.8	Trace.	Trace.	.7867	.5456	25.2	Slight.	660	–	1.58	Beneath Country Club bridge.
June 15.....	49	Logansport..........	14.0	.0001	.0000	.8449	.5465	24.8	Slight.	240	+	1.58	Two miles below number 48.
June 15.....	50	Logansport..........	14.6	Trace.	.0000	.8317	.5374	23.6	Slight.	468	–	1.58	Beneath I. U. T. bridge, 1½ miles below number 49.
June 15.....	51	Logansport..........	14.6	Trace.	.0000	.8387	.5374	23.6	Slight.	800	+	2.0	Under 16th St. bridge, 1 mile below number 50.
June 15.....	52	Logansport..........	14.6	Trace.	.0000	.8537	.4828	23.6	Slight.	1,520	+	2.0	Under 3rd St. bridge, ½ mile below number 51.
June 15.....	53	Logansport..........	1.4	Trace.	Trace.	.8035	.3765	24.4	Slight.	6,000	+	2.0	Under Cicott St. bridge, 500 feet below Eel River.
June 15.....	54	Logansport..........	6.2	Trace.	Trace.	.7867	.4646	24.4	Slight.	28,400	+	2.0	Above Island at Asylum, ¾ miles below number 53.
June 17.....	62	Pittsburg............	5.6	.0001	.0000	.8032	2.3929	13.2	Much.	5,700	+	2.17	Beneath bridge, ½ mile below Pittsburg.
June 17.....	63	Pittsburg............	5.2	.0001	.0500	.6451	.8152	12.8	Much.	2,500	+	2.17	Falling Spring Lodge, 3 miles below number 62.
June 17.....	64	Americus............	4.8	.0001	.0500	.6527	.7019	12.8	Much.	5,200	+	2.17	Beneath bridge at Americus.
June 17.....	65	Americus............	5.0	.0001	.0500	.6527	.7828	13.2	Much.	460	+	2.17	300 feet above Tippecanoe River.
June 17.....	67	Americus............	3.8	.0001	.0500	.6525	2.0042	13.2	Much.	3,600	+	2.17	1,000 feet below junction of rivers.

June 17	68	Americus	3.8	.0001	.0500	.6527	2.0920	13.2	Much.	5,100	+	2.17	1 mile below mouth of Tippecanoe River.
June 17	69	Americus	2.8	.0001	.0500	.6693	2.0898	13.2	Much.	3,440	+	2.17	Beneath new bridge, 1 mile below number 68.
June 17	70	Lafayette	2.6	.0001	.1000	.6443	2.0876	12.8	Much.	6,500	+	2.17	500 feet below mouth of Wild Cat Creek.
June 17	71	Lafayette	2.6	.0001	.1000	.6694	2.0853	13.2	Much.	1,700	+	2.17	Soldiers' Home, opposite pumping station.
June 19	72	Lafayette	5.8	.0002	.1000	.7203	1.3900	16.0	Much.	3,000	+	5.50	Opposite Soldiers' Home pumping station.
June 19	73	Lafayette	6.6	.0002	.1000	.7838	1.3100	16.0	Much.	1,100	+	5.50	Lookout Lodge, 1½ miles below number 72
June 19	74	Lafayette	6.2	.0002	.1000	.7166	1.4700	15.6	Much.	2,100	+	5.50	Opposite Lafayette Pumping Station.
June 19	75	Lafayette	5.8	.0002	.1500	.7166	1.4100	15.6	Much.	2,800	+	5.50	Beneath Brown street bridge.
June 19	76	Lafayette	5.4	.0002	.1000	.7166	1.6100	15.2	Much.	2,000	−	5.50	Beneath Main street bridge.
June 19	77	Lafayette	5.8	.0002	.0000	.7614	1.5600	15.2	Much.	3,200	+	5.50	500 feet below Big Four Railroad bridge.
June 19	78	Lafayette	5.8	.0003	.2500	.7288	1.6100	16.4	Much.	2,400	+	5.50	End strawboard fence, 800 feet below strawboard.
June 19	79	Lafayette	5.6	.0004	.2500	.7257	2.2800	17.6	Much.	1,300	+	5.50	Opposite shanty houses, 800 feet below number 78.
June 21	89	Lafayette	1.50	.0004	.3000	.7806	1.6500	15.2	Much.	3,900	+	5.34	Lafayette A; same as number 72.
June 21	90	Lafayette	1.2	.0004	.2000	.7741	1.7000	14.4	Much.	4,200	+	5.34	Lafayette B; same as number 73.
June 21	91	Lafayette	1.1	.0004	.2000	.7614	1.2800	13.6	Much.	3,700	+	5.34	Lafayette C; same as number 74.
June 21	92	Lafayette	1.3	.0004	.2000	.7614	1.7200	13.6	Much.	3,800	+	5.34	Lafayette D; same as number 75.
June 21	93	Lafayette	1.3	.0004	.2000	.7698	1.7400	14.0	Much.	2,200	+	5.34	Lafayette E; same as number 76.
June 21	94	Lafayette	1.3	.0004	.2000	.7698	1.6900	13.6	Much.	5,000	+	5.34	Lafayette F; same as number 77.
June 21	95	Lafayette	1.3	.0004	.2000	.7457	1.9100	14.0	Much.	25,000	+	5.34	Lafayette G; same as number 78.
June 21	96	Lafayette	1.4	.0004	.2000	.7257	1.8700	13.6	Much.	6,500	+	5.34	Lafayette H; same as number 79.
June 21	97	Lafayette	1.5	.0004	.2000	.7698	1.9500	13.6	Much.	3,000	+	5.34	Lafayette I; 2,000 feet below number 96.
June 21	98	Lafayette	1.5	.0004	.2000	.7196	1.9100	13.6	Much.	4,100	+	5.34	Lafayette K; 1 mile below number 96.
June 24	99	Lafayette	1.6	.0002	.2000	.7287	.9400	18.0	Slight.	3,900	+	3.42	Lafayette A.
June 24	100	Lafayette	1.4	.0002	.2000	.7499	.9300	18.4	Slight.	1,800	+	3.42	Lafayette B.
June 24	101	Lafayette	1.6	.0002	.2000	.7531	.8800	18.0	Slight.	2,055	+	3.42	Lafayette C.
June 24	102	Lafayette	1.4	.0002	.3000	.7531	.9200	18.0	Slight.	2,500	+	3.42	Lafayette D.
June 24	103	Lafayette	1.2	.0002	.3000	.7866	.9000	18.4	Slight.	4,300	+	3.42	Lafayette E.
June 24	104	Lafayette	1.6	.0002	.3000	.5857	.9200	18.0	Slight.	2,800	−	3.42	Lafayette F.
June 24	105	Lafayette	1.3	.0002	.1000	.7880	.8900	18.0	Slight.	2,900	+	3.42	Lafayette G.
June 24	106	Lafayette	1.6	.0002	.1000	.7580	.8800	17.6	Slight.	900	+	3.42	Lafayette H.
June 24	107	Lafayette	1.6	.0002	.3000	.7615	.9000	17.6	Slight.	1,700	+	3.42	Lafayette I.
June 24	108	Lafayette	1.5	.0002	.3000	.7618	.9100	17.2	Slight.	3,300	+	3.42	Lafayette K.
June 26	116	Lafayette	2.2	.0002	.0800	.7532	.7348	20.0	Slight.	1,300	−	2.25	Lafayette A.
June 26	117	Lafayette	2.2	.0002	.0800	.7822	.8046	20.0	Slight.	1,200	+	2.25	Lafayette B.
June 26	118	Lafayette	2.2	.0002	.0800	.8200	.7054	20.0	Slight.	3,500	+	2.25	Lafayette C.
June 26	119	Lafayette	2.2	.0002	.0800	.7949	.7760	20.0	Slight.	800	+	2.25	Lafayette D.
June 26	120	Lafayette	2.0	.0002	.0800	.7865	.7760	20.0	Slight.	1‘100	+	2.25	Lafayette E.
June 26	121	Lafayette	2.0	.0002	.0800	.7447	.7466	20.0	Slight.	1‘400	+	2.25	Lafayette F.
June 26	122	Lafayette	1.8	.0001	.0800	.7840	.7466	19.8	Slight.	1‘200	+	2.25	Lafayette G.
June 26	123	Lafayette	2.0	.0002	.0800	.8709	.8593	20.0	Slight.	300	+	2.25	Lafayette H.
June 26	124	Lafayette	2.0	.0002	.0800	.7624	.7956	20.0	Slight.	200	+	2.25	Lafayette I.
June 26	125	Lafayette	2.0	.0002	.0800	.7624	.8348	20.0	Slight.	39,400	+	2.25	Lafayette K.
June 28	137	Lafayette to Attica	1.7	.0002	.0800	.7203	.7348	20.2	Slight.	90,000	+	1.83	2 miles below Lafayette; oil and waste on water.
June 28	138	Lafayette to Attica	1.7	.0001	.0800	.7335	.7936	20.0	Slight.	78,000	+	1.83	4 miles below Lafayette Park; surface cleaning.

TABLE 15.

SAMPLES FROM THE WABASH RIVER

(Continued.)

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
June 28.....	139	Lafayette to Attica...	1.6	.0002	.0900	.6611	.8524	20.2	Slight.	9,450	+	1.83	6 miles below Lafayette; slight waste on water.
June 28.....	140	Lafayette to Attica...	1.5	.0002	.0800	.7029	.7245	20.4	Slight.	8,900	+	1.83	8 miles below Lafayette; no waste noticeable.
June 28.....	141	Lafayette to Attica...	1.6	.0003	.0800	.7196	.8034	20.2	Slight.	8,700	+	1.83	11 miles below Lafayette, beneath Granville bridge.
June 28.....	142	Lafayette to Attica...	1.5	.0001	.0800	.7029	.8426	20.2	Slight.	8,910	+	1.83	13 miles below Lafayette, 2 miles below number 141.
June 28.....	143	Lafayette to Attica...	1.6	.0002	.0000	.7965	.8328	20.4	Slight.	75,000	+	1.83	16 miles below Lafayette.
June 28.....	144	Lafayette to Attica...	1.6	.0001	.0000	.8325	.8328	20.2	Slight.	80,000	+	1.83	17 miles below Lafayette.
June 28.....	145	Lafayette to Attica...	1.7	.0001	.0800	.8033	.8625	20.4	Slight.	92,000	+	1.83	19 miles below Lafayette.
June 28.....	146	Lafayette to Attica...	1.7	.0002	.0700	.8535	.8625	20.4	Slight.	98,000	+	1.83	23 miles below Lafayette.
June 28.....	147	Lafayette to Attica...	1.6	.0002	.0800	.9372	.7956	20.4	Slight.	86,000	+	1.83	25 miles below Lafayette.
June 28.....	148	Lafayette to Attica...	1.6	.0001	.0800	.9204	.7856	20.4	Slight.	74,000	+	1.83	27 miles below Lafayette.
June 29.....	149	Attica..............	1.6	.0002	.0800	.9310	.9100	20.2	Slight.	8,220	+	1.58	3 miles above Attica, A.
June 29.....	150	Attica..............	1.7	.0002	.0800	.8064	.6950	20.1	Slight.	6,250	+	1.58	1½ miles above Attica, B.
June 29.....	151	Attica..............	1.6	.0001	.0700	.8368	.7240	20.2	Slight.	4,800	+	1.58	Beneath public bridge, C.
June 29.....	152	Attica..............	1.5	.0003	.0800	.8474	.8230	20.4	Slight.	4,400	+	1.40	1 mile below number 151, D.
July 1.....	159	Attica..............	1.6	.0001	.0800	.7792	.6950	21.8	Slight.	2,060	+	1.40	Attica A.
July 1.....	160	Attica..............	1.7	.0001	.0800	.7737	.8040	21.7	Slight.	5,910	+	1.40	Attica B.
July 1.....	161	Attica..............	2.0	.0001	.0600	.8192	.7050	22.0	Slight.	4,230	+	1.40	Attica C.
July 1.....	162	Attica..............	2.0	.0001	.0800	.7198	.7850	21.9	Slight.	4,370	+	1.60	Attica D.
July 2.....	167	Attica to Covington...	1.8	.0001	.0600	.8060	.6664	20.8	Slight.	6,300	+	1.60	1 mile below Attica.
July 2.....	169	Attica to Covington...	2.4	.0001	.0600	.7030	.6470	21.2	Slight.	3,900	+	1.60	2 miles below number 167.
July 2.....	170	Attica to Covington...	2.4	.0001	.0600	.8202	.7840	22.2	Slight.	4,500	+	1.60	2 miles below number 169.
July 2.....	171	Attica to Covington...	2.2	.0002	.0800	.8700	.6860	20.8	Slight.	2,200	+	1.60	2 miles below number 170.
July 2.....	172	Attica to Covington...	2.4	.0002	0.800	.8060	.6370	21.2	Slight.	4,200	+	1.60	2 miles below number 171.
July 2.....	173	Attica to Covington...	2.5	.0003	.0600	.7700	.7210	20.0	Slight.	2,900	+	1.60	2 miles below number 172.
July 2.....	174	Attica to Covington...	2.6	.0003	.0600	.7951	.7040	20.2	Slight.	3,200	+	1.60	2 miles below number 173.
July 2.....	175	Attica to Covington...	2.4	.0002	.0700	.7202	.7708	20.4	Slight.	3,200	+	1.60	2 miles below number 174.
July 2.....	176	Attica to Covington...	2.5	.0003	.0800	.8286	.7802	20.4	Slight.	4,700	+	1.60	2 miles below number 175.
July 2.....	177	Attica to Covington...	2.4	.0003	.0800	.8370	.6392	20.4	Slight.	3,100	+	1.60	2 miles below number 176.
July 5.....	178	Covington..........	1.6	.0002	.0500	.7877	.6486	21.4	Slight.	3,200	+	3.40	2 miles above Covington, A.

July 5.....	179	Covington...........	1.6	.0002	.0500	.7737	.6392	21.8	Slight.	3,900	+	3.40	1 mile above bridge; B.
July 5.....	180	Covington...........	1.8	.0002	.0500	.8035	.7574	21.4	Slight.	4,400	+	3.40	Beneath covered bridge; C.
July 5.....	184	Covington...........	1.7	.0002	.7000	.8131	.1504	22.0	Slight.	3,900	+	3.40	½ mile below Big Four bridge; D.
July 5.....	185	Covington...........	1.6	.0002	.8000	.8301	.3568	21.2	Slight.	4,000	+	3.40	1 mile below Big Four bridge; E.
July 5.....	186	Covington...........	1.6	.0002	.7000	.8370	.3760	18.0	Slight.	2,800	+	3.40	1½ miles below Big Four railroad; F.
July 5.....	187	Covington...........	1.7	.0002	.5000	.8639	.3640	22.4	Slight.	4,500	+	3.40	2 miles below Big Four bridge; G.
July 6.....	188	Covington...........	1.8	.0001	.0800	.7792	.6856	20.2	Slight.	8,000	+	2.60	Covington; A.
July 6.....	189	Covington...........	1.6	.0001	.0800	.7898	.6204	20.0	Slight.	11,000	+	2.60	Covington; B.
July 6.....	190	Covington...........	1.6	.0001	.0600	.8420	.8084	20.0	Slight.	12,000	+	2.60	Covington; C.
July 6.....	194	Covington...........	1.6	.0001	.08000	.8470	.6674	21.2	Slight.	2,000	+	2.60	Covington; D.
July 6.....	195	Covington...........	1.4	.0002	.0800	.7737	.8648	20.0	Slight.	3,200	+	2.60	Covington; E.
July 6.....	196	Covington...........	1.4	.0001	.0600	.7941	.6768	20.0	Slight.	6,000	+	2.60	Covington; F.
July 6.....	197	Covington...........	1.4	.0002	.0800	.7616	.6788	19.6	Slight.	5,220	+	2.60	Covington; G.
July 8.....	199	Covington...........	1.8	.0001	.0800	.8460	.6850	20.0	Slight.	3,200	+	1.80	Covington; A.
July 8.....	200	Covington...........	1.8	.0001	.0800	.7980	.3575	20.0	Slight.	3,600	+	1.80	Covington; B.
July 8.....	201	Covington...........	1.9	.0001	.0800	.7870	.7620	20.0	Slight.	3,800	+	1.80	Covington; C.
July 8.....	202	Covington...........	1.8	.0001	.0800	.7200	.7000	20.1	Slight.	6,400	+	1.80	Covington; D.
July 8.....	203	Covington...........	1.8	.0001	.0800	.7690	.6280	20.4	Slight.	40,000	+	1.80	Covington; E.
July 8.....	204	Covington...........	1.7	.0001	.0800	.7690	.6460	20.4	Slight.	6,000	+	1.80	Covington; F.
July 8.....	205	Covington...........	1.7	.0001	.0800	.8140	.7280	20.4	Slight.	2,400	+	1.80	Covington; G.
July 9.....	210	Covington...........	1.8	.0001	.0800	.8100	.6860	21.2	Slight.	2,000	+	2.80	Covington; A.
July 9.....	211	Covington...........	2.0	.0001	.0700	.8400	.7800	20.6	Slight.	4,500	+	2.80	Covington; B.
July 9.....	212	Covington...........	2.1	.0001	.0700	.8360	.8920	20.4	Slight.	2,000	+	2.80	Covington; C.
July 9.....	213	Covington...........	2.0	.0001	.0800	.8370	.7610	19.2	Slight.	2,400	+	2.80	Covington; D.
July 9.....	214	Covington...........	2.4	.0001	.0600	.8370	.6780	20.8	Slight.	3,200	+	2.80	Covington; E.
July 9.....	215	Covington...........	2.2	.0001	.0800	.8400	.8460	20.4	Slight.	2,000	+	2.80	Covington; F.
July 9.....	216	Covington...........	2.1	.0001	.0800	.8340	.7800	21.2	Slight.	1,400	+	2.80	Covington; G.
July 9.....	217	Covington...........	2.0	.0001	.0800	.8210	.8090	20.8	Slight.	2,240	+	2.80	Covington, H; 2½ miles below railroad bridge.
July 9.....	218	Covington...........	2.0	.0001	.0800	.8100	.7900	21.2	Slight.	3,210	+	2.80	Covington, I; 3 miles below railroad bridge.
July 9.....	219	Covington...........	2.0	.0001	.0800	.8000	.8090	21.2	Slight.	3,200	+	2.80	Covington, J; 3½ miles below railroad bridge.
July 11.....	220	Covington to Montezuma.	1.6	.0001	.1800	.6860	.8140	18.8	Slight.	2,800	+	2.40	2 miles below Covington.
July 11.....	221	Covington to Montezuma.	1.6	.0001	.1800	.6286	.7896	18.8	Slight.	8,200	+	2.40	3 miles from number 220.
July 11.....	222	Covington to Montezuma.	1.9	.0001	.1800	.6863	.7332	19.2	Dec.	3,000	+	2.40	Perrysville, Ind.; beneath bridge.
July 11.....	223	Covington to Montezuma.	1.8	.0001	.1800	.6696	.8070	20.2	Dec.	1,900	+	2.40	1 mile below number 222.
July 11.....	224	Covington to Montezuma.	1.8	.0001	.1800	.6863	.9210	21.4	Dec.	2,000	+	2.40	2 miles below number 222.
July 11.....	225	Covington to Montezuma.	1.6	.0001	.0800	.6694	.7708	21.2	Dec.	12,000	+	2.40	3 miles below number 222.
July 11.....	226	Covington to Montezuma.	1.8	.0001	.0600	.7114	.7408	22.2	Dec.	7,000	+	2.40	4 miles below number 222.
July 11.....	227	Covington to Montezuma.	1.8	.0001	.0600	.6978	.7614	19.5	Dec.	60,000	+	2.40	5 miles below number 222.

TABLE 15.

SAMPLES FROM THE WABASH RIVER

(Continued.)

DATE.	Laboratory No.	Sampling Point.	CHEMICAL.							BACTERIAL.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
June 28.....	139	Lafayette to Attica...	1.6	.0002	.0900	.6611	.8524	20.2	Slight.	9,450	+	1.83	6 miles below Lafayette; slight waste on water.
June 28.....	140	Lafayette to Attica...	1.5	.0002	.0800	.7029	.7245	20.4	Slight.	8,900	+	1.83	8 miles below Lafayette; no waste noticeable.
June 28.....	141	Lafayette to Attica...	1.6	.0003	.0800	.7196	.8034	20.2	Slight.	8,700	+	1.83	11 miles below Lafayette, beneath Granville bridge.
June 28.....	142	Lafayette to Attica...	1.5	.0001	.0800	.7029	.8426	20.2	Slight.	8,910	+	1.83	13 miles below Lafayette, 2 miles below number 141.
June 28.....	143	Lafayette to Attica...	1.6	.0002	.0000	.7965	.8328	20.4	Slight.	75,000	+	1.83	16 miles below Lafayette.
June 28.....	144	Lafayette to Attica...	1.6	.0001	.0000	.8325	.8328	20.2	Slight.	80,000	+	1.83	17 miles below Lafayette.
June 28.....	145	Lafayette to Attica...	1.7	.0001	.0800	.8033	.8625	20.4	Slight.	92,000	+	1.83	19 miles below Lafayette.
June 28.....	146	Lafayette to Attica...	1.7	.0002	.0700	.8535	.8625	20.4	Slight.	98,000	+	1.83	23 miles below Lafayette.
June 28.....	147	Lafayette to Attica...	1.6	.0002	.0800	.9372	.7956	20.4	Slight.	86,000	+	1.83	25 miles below Lafayette.
June 28.....	148	Lafayette to Attica...	1.6	.0001	.0800	.9204	.7856	20.4	Slight.	74,000	+	1.83	27 miles below Lafayette.
June 29.....	149	Attica..............	1.6	.0002	.0800	.9310	.9100	20.2	Slight.	8,220	+	1.58	3 miles above Attica, A.
June 29.....	150	Attica..............	1.7	.0002	.0800	.8064	.6950	20.1	Slight.	6,250	+	1.58	1½ miles above Attica, B.
June 29.....	151	Attica..............	1.6	.0001	.0700	.8368	.7240	20.2	Slight.	4,800	+	1.58	Beneath public bridge, C.
June 29.....	152	Attica..............	1.5	.0003	.0800	.8474	.8230	20.4	Slight.	4,400	+	1.40	1 mile below number 151, D.
July 1.....	159	Attica..............	1.6	.0001	.0800	.7792	.6950	21.8	Slight.	2,060	+	1.40	Attica A.
July 1.....	160	Attica..............	1.7	.0001	.0800	.7737	.8040	21.7	Slight.	5,910	+	1.40	Attica B.
July 1.....	161	Attica..............	2.0	.0001	.0600	.8192	.7050	22.0	Slight.	4,230	+	1.40	Attica C.
July 1.....	162	Attica..............	2.0	.0001	.0800	.7198	.7850	21.9	Slight.	4,370	+	1.60	Attica D.
July 2.....	167	Attica to Covington...	1.8	.0001	.0600	.8060	.6664	20.8	Slight.	6,300	+	1.60	1 mile below Attica.
July 2.....	169	Attica to Covington...	2.4	.0001	.0600	.7030	.6470	21.2	Slight.	3,900	+	1.60	2 miles below number 167.
July 2.....	170	Attica to Covington...	2.4	.0001	.0600	.8202	.7840	22.2	Slight.	4,500	+	1.60	2 miles below number 169.
July 2.....	171	Attica to Covington...	2.2	.0002	.0800	.8700	.6860	20.8	Slight.	2,200	+	1.60	2 miles below number 170.
July 2.....	172	Attica to Covington...	2.4	.0002	0.800	.8060	.6370	21.2	Slight.	4,200	+	1.60	2 miles below number 171.
July 2.....	173	Attica to Covington...	2.5	.0003	.0600	.7700	.7210	20.0	Slight.	2.900	+	1.60	2 miles below number 172.
July 2.....	174	Attica to Covington...	2.6	.0003	.0600	.7951	.7040	20.2	Slight.	3,200	+	1.60	2 miles below number 173.
July 2.....	175	Attica to Covington...	2.4	.0002	.0700	.7202	.7708	20.4	Slight.	3,200	+	1.60	2 miles below number 174.
July 2.....	176	Attica to Covington...	2.5	.0003	.0800	.8286	.7802	20.4	Slight.	4,700	+	1.60	2 miles below number 175.
July 2.....	177	Attica to Covington...	2.4	.0003	.0800	.8370	.6392	20.4	Slight.	3,100	+	1.60	2 miles below number 176.
July 5.....	178	Covington...........	1.6	.0002	.0500	.7877	.6486	21.4	Slight.	3,200	+	3.40	2 miles above Covington, A.

July 5.....	179	Covington..........	1.6	.0002	.0500	.7737	.6392	21.8	Slight.	3,900	+	3.40	1 mile above bridge; B.
July 5.....	180	Covington..........	1.8	.0002	.0500	.8035	.7574	21.4	Slight.	4,400	+	3.40	Beneath covered bridge; C.
July 5.....	184	Covington..........	1.7	.0002	.7000	.8131	.1504	22.0	Slight.	3,900	+	3.40	½ mile below Big Four bridge; D.
July 5.....	185	Covington..........	1.6	.0002	.8000	.8301	.3568	21.2	Slight.	4,000	+	3.40	1 mile below Big Four bridge; E.
July 5.....	186	Covington..........	1.6	.0002	.7000	.8370	.3760	18.0	Slight.	2,800	+	3.40	1½ miles below Big Four railroad; F.
July 5.....	187	Covington..........	1.7	.0002	.5000	.8639	.3640	22.4	Slight.	4,500	+	3.40	2 miles below Big Four bridge; G.
July 6.....	188	Covington..........	1.8	.0001	.0800	.7792	.6856	20.2	Slight.	8,000	+	2.60	Covington; A.
July 6.....	189	Covington..........	1.6	.0001	.0800	.7898	.6204	20.0	Slight.	11,000	+	2.60	Covington; B.
July 6.....	190	Covington..........	1.6	.0001	.0600	.8420	.8084	20.0	Slight.	12,000	+	2.60	Covington; C.
July 6.....	194	Covington..........	1.6	.0001	.08000	.8470	.6674	21.2	Slight.	2,000	+	2.60	Covington; D.
July 6.....	195	Covington..........	1.4	.0002	.0800	.7737	.8648	20.0	Slight.	3,200	+	2.60	Covington; E.
July 6.....	196	Covington..........	1.4	.0001	.0600	.7941	.6768	20.0	Slight.	6,000	+	2.60	Covington; F.
July 6.....	197	Covington..........	1.4	.0002	.0800	.7616	.6788	19.6	Slight.	5,220	+	2.60	Covington; G.
July 8.....	199	Covington..........	1.8	.0001	.0800	.8460	.6850	20.0	Slight.	3,200	+	1.80	Covington; A.
July 8.....	200	Covington..........	1.8	.0001	.0800	.7980	.3575	20.0	Slight.	3,600	+	1.80	Covington; B.
July 8.....	201	Covington..........	1.9	.0001	.0800	.7870	.7620	20.0	Slight.	3,800	+	1.80	Covington; C.
July 8.....	202	Covington..........	1.8	.0001	.0800	.7200	.7000	20.1	Slight.	6,400	+	1.80	Covington; D.
July 8.....	203	Covington..........	1.8	.0001	.0800	.7690	.6280	20.4	Slight.	40,000	+	1.80	Covington; E.
July 8.....	204	Covington..........	1.7	.0001	.0800	.7690	.6460	20.4	Slight.	6,000	+	1.80	Covington; F.
July 8.....	205	Covington..........	1.7	.0001	.0800	.8140	.7280	20.4	Slight.	2,400	+	1.80	Covington; G.
July 9.....	210	Covington..........	1.8	.0001	.0800	.8100	.6860	21.2	Slight.	2,000	+	2.80	Covington; A.
July 9.....	211	Covington..........	2.0	.0001	.0700	.8400	.7800	20.6	Slight.	4,500	+	2.80	Covington; B.
July 9.....	212	Covington..........	2.1	.0001	.0700	.8360	.8920	20.4	Slight.	2,000	+	2.80	Covington; C.
July 9.....	213	Covington..........	2.0	.0001	.0800	.8370	.7610	19.2	Slight.	2,400	+	2.80	Covington; D.
July 9.....	214	Covington..........	2.4	.0001	.0600	.8370	.6780	20.8	Slight.	3,200	+	2.80	Covington; E.
July 9.....	215	Covington..........	2.2	.0001	.0800	.8400	.8460	20.4	Slight.	2,000	+	2.80	Covington; F.
July 9.....	216	Covington..........	2.1	.0001	.0800	.8340	.7800	21.2	Slight.	1,400	+	2.80	Covington; G.
July 9.....	217	Covington..........	2.0	.0001	.0800	.8210	.8090	20.8	Slight.	2,240	+	2.80	Covington, H; 2½ miles below railroad bridge.
July 9.....	218	Covington..........	2.0	.0001	.0800	.8100	.7900	21.2	Slight.	3,210	+	2.80	Covington, I; 3 miles below railroad bridge.
July 9.....	219	Covington..........	2.0	.0001	.0800	.8000	.8090	21.2	Slight.	3,200	+	2.80	Covington, J; 3½ miles below railroad bridge.
July 11.....	220	Covington to Montezuma.	1.6	.0001	.1800	.6860	.8140	18.8	Slight.	2,800	+	2.40	2 miles below Covington.
July 11.....	221	Covington to Montezuma.	1.6	.0001	.1800	.6286	.7896	18.8	Slight.	8,200	+	2.40	3 miles from number 220.
July 11.....	222	Covington to Montezuma.	1.9	.0001	.1800	.6863	.7332	19.2	Dec.	3,000	+	2.40	Perrysville, Ind.; beneath bridge.
July 11.....	223	Covington to Montezuma.	1.8	.0001	.1800	.6696	.8070	20.2	Dec.	1,900	+	2.40	1 mile below number 222.
July 11.....	224	Covington to Montezuma.	1.8	.0001	.1800	.6863	.9210	21.4	Dec.	2,000	+	2.40	2 miles below number 222.
July 11.....	225	Covington to Montezuma.	1.6	.0001	.0800	.6694	.7708	21.2	Dec.	12,000	+	2.40	3 miles below number 222.
July 11.....	226	Covington to Montezuma.	1.8	.0001	.0500	.7114	.7408	22.2	Dec.	7,000	+	2.40	4 miles below number 222.
July 11.....	227	Covington to Montezuma.	1.8	.0001	.0600	.6978	.7614	19.5	Dec.	60,000	+	2.40	5 miles below number 222.

TABLE 15.

MPLES FROM THE WABASH RIVER.

(Continued.)

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
July 11.....	228	Covington to Montezuma.	2.1	.0001	.0800	.7114	.8460	19.2	Dec.	30,000	+	2.40	6 miles below number 222.
July 11.....	230	Covington to Montezuma.	1.6	.0001	.0700	.7030	.8302	21.8	Dec.	87,000	+	2.40	7 miles below number 222.
July 11.....	231	Covington to Montezuma.	1.8	.0001	.0700	.6971	.7078	19.6	Dec.	90,000	+	2.40	8 miles below number 222.
July 12.....	232	Cayuga to Newport...	1.6	.0001	.0800	.7368	.8740	18.2	Dec.	14,000	+	2.80	Cayuga; 1 mile below railroad bridge.
July 12.....	233	Cayuga to Newport...	1.6	.0001	.0800	.6608	.9964	18.0	Dec.	8,000	+	2.80	2 miles below railroad bridge.
July 12.....	234	Cayuga to Newport...	1.6	.0001	.0500	.6945	.9760	17.0	Dec.	6,200	+	2.80	3 miles below railroad bridge.
July 12.....	235	Cayuga to Newport...	1.5	.0001	.0500	.6608	.9110	18.6	Dec.	4,500	+	2.80	4 miles below railroad bridge.
July 12.....	236	Cayuga to Newport...	1.6	.0001	.0500	.6776	.9220	18.8	Dec.	4,200	+	2.80	5 miles below railroad bridge.
July 12.....	237	Cayuga to Newport...	1.7	.0001	.0600	.6776	.9110	19.6	Dec.	4,400	+	2.80	6 miles below railroad bridge.
July 12.....	238	Newport to Montezuma.	1.8	.0001	.0600	.6945	.9020	16.8	Dec.	6,500	+	2.80	Newport; beneath public bridge.
July 12.....	240	Newport to Montezuma.	1.6	.0001	.1200	.6776	.9420	18.8	Dec.	48,000	+	2.80	1 mile below bridge.
July 12.....	241	Newport to Montezuma.	1.4	.0001	.1000	.7114	.9268	18.2	Dec.	28,000	+	2.80	2 miles below bridge.
July 12.....	243	Newport to Montezuma.	1.4	.0001	.0800	.7254	.9640	18.8	Dec.	7,000	+	2.80	3 miles below bridge.
July 12.....	244	Newport to Montezuma.	1.4	.0001	.0800	.7460	.9260	19.2	Dec.	4,500	+	2.00	Newport bridge, 4 miles below bridge.
July 12.....	245	Newport to Montezuma.	1.6	.0001	.0800	.7100	.9180	19.4	Dec.	5,200	+	2.00	5 miles below bridge.
July 12.....	246	Newport to Montezuma.	1.6	.0001	.0800	.7220	.8980	19.6	Dec.	6,400	+	2.00	6 miles below bridge.
July 13.....	247	Montezuma..........	1.0	.0001	.0900	.6950	.9810	18.2	Dec.	6,200	+	3.50	Montezuma, A; 2 miles above Montezuma.
July 13.....	248	Montezuma..........	1.2	.0001	.0800	.6610	1.6200	17.6	Dec.	5,400	+	3.50	Montezuma, B; 1½ miles above Montezuma.
July 13.....	249	Montezuma..........	1.2	.0001	.0500	.6870	1.5100	16.8	Dec.	6,800	+	3.50	Montezuma, C; 1 mile above Montezuma.
July 13.....	250	Montezuma..........	1.4	.0001	.0800	.7210	1.7210	16.0	Dec.	4,800	+	3.50	Montezuma, D; ½ mile above Montezuma.
July 13.....	251	Montezuma..........	1.2	.0001	.0400	.7040	.9880	16.0	Dec.	5,200	+	3.50	Montezuma, E; beneath public bridge.
July 13.....	252	Montezuma..........	1.2	.0001	.1000	.7280	1.7100	16.4	Dec.	6,000	+	3.50	Montezuma, F; ½ mile below Montezuma.

July 13.....	253	Montezuma..........	1.2	.0001	.0800	.7280	.6860	15.8	Dec.	6,200	+	3.50	Montezuma, G; 1 mile below Montezuma.
July 13.....	254	Montezuma..........	1.0	.0001	.0900	.7140	.9880	18.8	Dec.	5,700	+	3.50	Montezuma, H; 1½ miles below Montezuma.
July 13.....	255	Montezuma..........	1.2	.0001	.0700	.7870	.7210	19.5	Dec.	72,000	+	3.50	Montezuma, I; 2 miles below Montezuma
July 13.....	256	Montezuma..........	1.2	.0001	.0500	.6880	1.2460	18.0	Dec.	40,000	+	3.50	Montezuma, J; 2½ miles below Montezuma.
July 13.....	257	Montezuma..........	1.2	.0001	.0800	.7040	1.6000	18.2	Dec.	28,000	+	3.50	Montezuma, K; 3 miles below Montezuma.
July 16.....	258	Montezuma..........	2.8	.0002	.1500	.7290	1.8262	15.2	Dec.	2,200	+	10.70	Montezuma; A.
July 16.....	259	Montezuma..........	2.7	.0002	.1500	.6450	1.8030	13.2	Dec.	2,100	+	10.70	Montezuma; B.
July 16.....	260	Montezuma..........	3.2	.0002	.1500	.7190	1.9796	14.8	Dec.	1,968	+	10.70	Montezuma; C.
July 16.....	261	Montezuma..........	2.6	.0002	.1500	.7860	1.8720	11.0	Dec.	2,000	+	10.70	Montezuma; D.
July 16.....	262	Montezuma..........	3.2	.0002	.1300	.7360	1.5194	16.0	Dec.	1,760	+	10.70	Montezuma; E.
July 16.....	263	Montezuma..........	2.8	.0002	.1200	.7120	1.7896	16.0	Dec.	2,100	+	10.70	Montezuma; F.
July 16.....	264	Montezuma..........	2.8	.0002	.5000	.7220	1.7150	16.0	Dec.	2,600	+	10.70	Montezuma; G.
July 16.....	265	Montezuma..........	3.6	.0002	.1300	.7210	1.7620	14.6	Dec.	2,800	+	10.70	Montezuma; H.
July 16.....	266	Montezuma..........	1.8	.0001	.1700	.7040	1.6750	15.0	Dec.	3,200	+	10.70	Montezuma; I.
July 16.....	267	Montezuma..........	2.6	.0002	.1600	.7360	1.9876	15.0	Dec.	5,900	+	10.70	Montezuma; J.
July 16.....	268	Montezuma..........	2.9	.0002	.1700	.6880	1.3876	14.0	Dec.	5,280	+	10.70	Montezuma; K.
July 18.....	280	Montezuma..........	1.8	.0001	.1500	.6760	.9410	16.0	Dec.	2,864	+	6.00	Montezuma; A.
July 18.....	281	Montezuma..........	1.6	.0002	.2000	.6140	.9410	18.0	Dec.	3,210	+	6.00	Montezuma; B.
July 18.....	282	Montezuma..........	1.9	.0002	.2000	.6540	.9400	16.2	Dec.	2,970	+	6.00	Montezuma; C.
July 18.....	283	Montezuma..........	1.8	.0001	.1000	.6540	.9600	16.0	Dec.	2,680	+	6.00	Montezuma; D.
July 18.....	284	Montezuma..........	1.8	.0001	.1000	.6860	.9610	17.6	Dec.	2,800	+	6.00	Montezuma; E.
July 18.....	285	Montezuma..........	1.4	.0001	.2000	.6780	.9700	16.8	Dec.	3,820	+	6.00	Montezuma; F.
July 18.....	286	Montezuma..........	1.7	.0001	.2000	.6790	.9500	16.6	Dec.	3,320	+	6.00	Montezuma; G.
July 18.....	287	Montezuma..........	1.4	.0002	.1000	.6690	.9800	16.2	Dec.	3,100	+	6.00	Montezuma; H.
July 18.....	288	Montezuma..........	1.4	.0001	.2000	.7350	.8820	16.0	Dec.	2,980	+	6.00	Montezuma; I.
July 18.....	289	Montezuma..........	1.5	.0002	.2000	.7360	.9700	16.4	Dec.	3,200	+	6.00	Montezuma; J.
July 18.....	290	Montezuma..........	1.5	.0001	.2000	.6860	.9320	16.4	Dec.	3,100	+	6.00	Montezuma; K.
July 19.....	291	Montezuma..........	1.6	.0001	.1000	.6940	1.6820	15.6	Dec.	2,120	+	5.8	Montezuma; A.
July 19.....	292	Montezuma..........	1.6	.0001	.1500	.6690	.9600	18.0	Dec.	2,880	+	5.8	Montezuma; B.
July 19.....	293	Montezuma..........	1.3	.0001	.1500	.6860	1.2530	18.4	Dec.	3,860	+	5.8	Montezuma; C.
July 19.....	294	Montezuma..........	1.4	.0001	.1500	.7020	1.3430	14.0	Dec.	3,560	+	5.8	Montezuma; D.
July 19.....	295	Montezuma..........	1.4	.0001	.1500	.7020	1.4600	14.2	Dec.	3,240	+	5.8	Montezuma; E.
July 19.....	296	Montezuma..........	1.6	.0001	.0800	.6788	.8810	14.4	Dec.	3,120	+	5.8	Montezuma; F.
July 19.....	297	Montezuma..........	1.6	.0001	.1000	.6460	.8330	14.0	Dec.	3,230	+	5.8	Montezuma; G.
July 19.....	298	Montezuma..........	1.6	.0001	.1700	.6760	.9800	15.2	Dec.	3,470	+	5.8	Montezuma; H.
July 19.....	299	Montezuma..........	1.5	.0001	.2000	.7020	.8820	14.8	Dec.	2,980	+	5.8	Montezuma; I.
July 19.....	300	Montezuma..........	1.7	.0001	.1500	.7560	1.4720	14.6	Dec.	3,220	+	5.8	Montezuma; J.
July 19.....	301	Montezuma..........	1.8	.0001	.1500	.7040	.8040	14.4	Dec.	2,970	+	5.8	Montezuma; K.
July 22.....	313	Montezuma to Clinton	1.1	.0001	.1000	.7140	2.7322	14.2	Dec.	2,890	+	6.2	3 miles below Montezuma.
July 22.....	314	Montezuma to Clinton	1.2	.0001	.1000	.7350	2.3275	14.6	Dec.	3,246	+	6.2	4 miles below Montezuma.
July 22.....	315	Montezuma to Clinton	1.4	.0001	.1000	.7120	2.4010	13.2	Dec.	3,180	+	6.2	5 miles below Montezuma.
July 22.....	317	Montezuma to Clinton	1.0	.0001	.1200	.7120	.9898	12.8	Dec.	2,960	+	6.2	6 miles below Montezuma.
July 22.....	318	Montezuma to Clinton	1.0	.0001	.1200	.6750	2.4100	16.4	Dec.	3,320	+	6.2	7 miles below Montezuma.
July 22.....	319	Montezuma to Clinton	1.4	.0001	.1000	.7420	2.3800	13.4	Dec.	2,760	+	6.2	Clinton; beneath railroad bridge.
July 22.....	323	Clinton.............	1.4	.0001	.0500	.7780	3.6848	13.4	Dec.	3,260	+	6.2	1 mile below Clinton.
July 22.....	324	Clinton.............	1.2	.0001	.0600	.8970	3.2760	12.0	Dec.	2,870	+	6.2	2 miles below Clinton.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued.)

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
July 23.....	325	Clinton to Terre Haute	1.0	.0001	.0800	.6940	1.3524	12.4	Dec.	3,270	+	6.0	3 miles below Clinton.
July 23.....	326	Clinton to Terre Haute	1.0	.0001	.0800	.7430	1.6610	12.0	Dec.	2,960	+	6.0	4 miles below Clinton.
July 23.....	328	Clinton to Terre Haute	1.2	.0001	.1300	.7460	1.5890	12.4	Dec.	3,210	+	6.0	Clinton: 5 miles below Clinton.
July 23.....	329	Clinton to Terre Haute	1.2	.0001	.1000	.7040	1.8000	11.6	Dec.	2,860	+	4.8	6 miles below Clinton.
July 23.....	331	Clinton to Terre Haute	1.0	.0001	.1000	.6860	1.4480	13.2	Dec.	2,400	+	4.8	7 miles below Clinton.
July 23.....	332	Clinton to Terre Haute	1.0	.0001	.1000	.6610	1.9180	20.2	Dec.	1,800	+	4.8	8 miles below Clinton.
July 23.....	334	Clinton to Terre Haute	1.0	.0002	.0600	.6610	1.6230	15.0	Dec.	3,220	+	4.8	9 miles below Clinton.
July 23.....	336	Clinton to Terre Haute	.8	.0001	.0000	.5480	1.9420	12.0	Dec.	4,400	+	4.8	10 miles below Clinton.
July 23.....	337	Clinton to Terre Haute	1.4	.0001	.0800	.8040	1.8410	12.4	Dec.	3,880	+	4.8	11 miles below Clinton.
July 26.....	360	Terre Haute.........	.8	.0001	.1000	.7280	.7160	12.0	Dec.	3,210	+	4.8	Terre Haute: Main street bridge; A.
July 26.....	361	Terre Haute.........	1.0	.0001	.1200	.7280	.7660	18.0	100	4,000	+	4 8	½ mile below bridge; B.
July 26.....	362	Terre Haute.........	1.0	.0001	.0900	.7260	.7420	12.0	100	4,800	+	4.8	Wabash street bridge, 1 mile below bridge; C.
July 26.....	363	Terre Haute.........	.8	.0001	.1000	.7710	.6748	12.0	100	4,200	+	4.8	1½ miles below bridge; D.
July 26.....	364	Terre Haute.........	.8	.0001	.1000	.7640	.7000	11.6	100	3,280	+	4.8	2 miles below bridge; E.
July 26.....	365	Terre Haute.........	1.0	.0001	.1500	.6440	.6960	18.2	100	3,100	+	4.8	2½ miles below bridge; F.
July 26.....	366	Terre Haute.........	.8	.0001	.1200	.7706	.6800	15.2	100	3,700	+	4.8	3 miles below bridge; G.
July 26.....	367	Terre Haute.........	1.0	.0001	.0800	.7120	.7210	16.0	100	4,220	+	4.8	3½ miles below bridge; H.
July 26.....	368	Terre Haute.........	1.0	.0001	.0800	.7100	.6880	16.4	100	4,520	+	4.8	4 miles below bridge; I.
July 26.....	369	Terre Haute.........	1.0	.0001	.0800	.7540	.7220	17.2	100	4,800	+	4.8	Pennsylvania Railroad bridge; J.
July 26.....	370	Terre Haute.........	1.0	.0001	.0900	.7540	.7420	17.2	100	4,200	+	4.8	Big Four Railroad bridge; K.
July 26.....	371	Terre Haute.........	1.0	.0001	.0800	.7280	.6472	18.4	100	4,720	+	4.8	½ mile above pumping station; L.
July 26.....	372	Terre Haute.........	1.2	.0001	.0600	.6860	.6848	18.6	100	4,000	+	4.8	1 mile above pumping station; M.
July 26.....	373	Terre Haute.........	1.4	.0001	.0900	.7440	.6420	17.8	100	3,920	+	4.8	1½ miles above pumping station; N.
July 26.....	374	Terre Haute.........	1.2	.0001	.0700	.7120	.7100	18.0	100	3,870	+	4.8	2 miles above pumping station; O.
July 27.....	375	Terre Haute.........	1.0	.0001	.1200	.8240	.6980	17.4	150	2,770	+	4.5	Terre Haute; A.
July 27.....	376	Terre Haute.........	1.4	.0001	.1200	.8420	.6760	16.0	150	2,870	+	4.5	Terre Haute; B.
July 27.....	377	Terre Haute.........	1.3	.0001	.1500	.9320	.6570	18.0	150	3,100	+	4.5	Terre Haute; C.
July 27.....	378	Terre Haute.........	1.4	.0001	.1200	.7560	.7000	18.0	150	3,280	+	4.5	Terre Haute; D.
July 27.....	379	Terre Haute.........	2.4	.0001	.1000	.7660	.6980	17.8	150	3,870	+	4.5	Terre Haute; E.
July 27.....	380	Terre Haute.........	1.4	.0001	.1100	.8820	.7210	16.4	150	4,800	+	4.5	Terre Haute; F.
July 27.....	381	Terre Haute.........	1.8	.0001	.1400	.8040	.6470	18.4	150	4,320	+	4.5	Terre Haute; G.
July 27.....	382	Terre Haute.........	1.2	.0001	.1200	.7940	.6860	16.0	150	3,470	+	4.5	Terre Haute; H.

July 27.....	383	Terre Haute.........	1.6	.0001	.1100	.8620	.7120	18.0	150	3,800	+	4.5	Terre Haute; I.
July 27.....	384	Terre Haute.........	1.2	.0001	.1600	.8710	.7000	17.6	150	4,100	+	4.5	Terre Haute; J.
July 27.....	385	Terre Haute.........	1.3	.0001	.1000	.7860	.6480	16.8	150	3,900	+	4.5	Terre Haute; K.
July 27.....	386	Terre Haute.........	1.5	.0001	.1200	.6660	.6760	18.4	150	3,650	+	4.5	Terre Haute; L.
July 27.....	387	Terre Haute.........	1.4	.0001	.0900	.8740	.6860	17.5	150	2,940	+	4.5	Terre Haute; M.
July 27.....	388	Terre Haute.........	1.2	.0001	.0800	.9580	.6540	17.8	150	3,210	+	4.5	Terre Haute; N.
July 27.....	389	Terre Haute.........	1.4	.0001	.0800	.8440	.7140	18.2	150	3,460	+	4.5	Terre Haute; O.
July 29.....	390	Terre Haute.........	1.8	.0001	.0080	.2385	.6360	17.6	150	3,200	+	3.1	Terre Haute; A.
July 29.....	391	Terre Haute.........	1.6	.0001	.0800	.6140	.7260	16.6	150	2,900	+	3.1	Terre Haute; B.
July 29.....	392	Terre Haute.........	1.8	.0001	.0800	.7710	.7540	16.8	150	2,700	+	3.1	Terre Haute; C.
July 29.....	393	Terre Haute.........	1.8	.0002	.0800	.6860	.7160	17.2	150	3,400	+	3.1	Terre Haute; D.
July 29.....	394	Terre Haute.........	1.6	.0001	.0800	.7040	.7050	17.2	150	3,800	+	3.1	Terre Haute; E.
July 29.....	395	Terre Haute.........	1.6	.0001	.0800	.7040	.6170	17.6	150	4,100	+	3.1	Terre Haute; F.
July 29.....	396	Terre Haute.........	1.0	.0002	.0700	.6620	.7160	17.8	150	4,200	+	3.1	Terre Haute; G.
July 29.....	397	Terre Haute.........	1.6	.0001	.0600	.5670	.6570	16.8	150	5,000	+	3.1	Terre Haute; H.
July 29.....	398	Terre Haute.........	1.6	.0001	.0900	.6140	6070	17.6	150	4,710	+	3.1	Terre Haute; I.
July 29.....	399	Terre Haute.........	1.6	.0001	.0800	.5940	.8040	17.2	150	4,000	+	3.1	Terre Haute; J.
July 29.....	400	Terre Haute.........	1.6	.0001	.0700	.6120	.7440	17.0	150	3,270	+	3.1	Terre Haute; K.
July 29.....	401	Terre Haute.........	1.4	.0001	.0800	.6960	.7540	17.4	150	3,210	+	3.1	Terre Haute; L.
July 29.....	402	Terre Haute.........	1.4	.0001	.0600	.6770	.6560	16.8	150	4,280	+	3.1	Terre Haute; M.
July 29.....	403	Terre Haute.........	1.4	.0001	.0200	.7110	.6660	17.6	150	3,130	+	3.1	Terre Haute; N.
July 29.....	404	Terre Haute.........	1.4	.0001	.0800	.7180	.6960	17.2	150	4,120	+	3.1	Terre Haute; O.
July 31.....	420	Terre Haute.........	1.0	.0001	.0800	.8340	.7160	14.6	110	3,280	+	3.1	Terre Haute; A.
July 31.....	421	Terre Haute.........	1.0	.0001	.0800	.7180	.6670	15.0	110	2,760	+	2.2	Terre Haute; B.
July 31.....	422	Terre Haute.........	1.0	.0001	.0800	.7780	.6560	19.8	110	4,210	+	2.2	Terre Haute; C.
July 31.....	423	Terre Haute.........	1.2	.0001	.0700	.6940	.7360	18.4	110	3,860	+	2.2	Terre Haute; D.
July 31.....	424	Terre Haute.........	1.1	.0001	.0600	.7460	.6760	18.0	110	5,120	+	2.2	Terre Haute; E.
July 31.....	425	Terre Haute.........	1.2	.0002	.0800	.6860	.6660	17.6	110	3,420	+	2.2	Terre Haute; F.
July 31.....	426	Terre Haute.........	1.2	.0002	.0600	.7620	.6960	18.4	110	3,840	+	2.2	Terre Haute; G.
July 31.....	427	Terre Haute.........	1.1	.0001	.0800	.9100	.7260	17.8	110	4,220	+	2.2	Terre Haute; H.
July 31.....	428	Terre Haute.........	1.0	.0001	.0800	.7960	.7170	18.0	110	3,470	+	2.2	Terre Haute; I.
July 31.....	429	Terre Haute.........	1.0	.0002	.0800	.7870	.8040	18.0	110	2,880	+	2.2	Terre Haute; J.
July 31.....	430	Terre Haute.........	1.0	.0001	.0700	.7710	.6670	18.4	110	4,120	+	2.2	Terre Haute; K.
July 31.....	431	Terre Haute.........	.8	.0001	.0600	.7540	.6720	18.8	110	3,620	+	2.2	Terre Haute; L.
July 31.....	432	Terre Haute.........	1.2	.0001	.0800	.7370	.7060	18.4	110	3,210	+	2.2	Terre Haute; M.
July 31.....	433	Terre Haute.........	1.0	.0001	.0700	.7090	.7740	18.4	110	3,460	+	2.2	Terre Haute; N.
July 31.....	434	Terre Haute.........	1.0	.0001	.0600	.7160	7940	18.6	110	2,860	+	2.2	Terre Haute; O.
Aug. 1.....	435	Terre Haute.........	1.0	.0001	.0500	.8160	.8720	19.0	90	3,280	+	1.9	Terre Haute; A.
Aug. 1.....	436	Terre Haute.........	1.0	.0001	.0600	.7801	.8320	18.4	90	3,110	+	1.9	Terre Haute; B.
Aug. 1.....	437	Terre Haute.........	1.2	.0001	.0800	.7360	.8620	23.4	90	4,120	+	1.9	Terre Haute; C.
Aug. 1.....	438	Terre Haute.........	1.1	.0002	.0800	.7960	.7140	18.4	90	2,680	+	1.9	Terre Haute; D.
Aug. 1.....	439	Terre Haute.........	1.0	.0001	.0400	.8201	.7320	19.6	90	3,110	+	1.9	Terre Haute; E.
Aug. 1.....	440	Terre Haute.........	1.2	.0001	.1000	.7504	.8820	19.2	90	3,280	+	1.9	Terre Haute; F.
Aug. 1.....	441	Terre Haute.........	1.4	.0001	.0500	.7620	.8320	18.8	90	4,170	+	1.9	Terre Haute; G.
Aug. 1.....	442	Terre Haute.........	1.4	.0001	.0800	.7900	.6930	19.4	90	4,220	+	1.9	Terre Haute; H.
Aug. 1.....	443	Terre Haute.........	1.1	.0001	.0800	.7960	.7404	18.6	90	3,740	+	1.9	Terre Haute; I.
Aug. 1.....	444	Terre Haute.........	1.4	.0002	.0500	.8100	.8320	18.4	90	4,140	+	1.9	Terre Haute; J.
Aug. 1.....	445	Terre Haute.........	1.4	.0002	.0800	.9890	.7230	19.2	90	4,220	+	1.9	Terre Haute; K.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued.)

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli. Presumptive Test.		
Aug. 1.....	446	Terre Haute.........	1.4	.0002	.0800	.5502	.8901	18.6	90	3,640	+	1.9	Terre Haute; L.
Aug. 1.....	447	Terre Haute.........	1.4	.0003	.0500	.8800	.6930	19.8	90	3,870	+	1.9	Terre Haute; M.
Aug. 1.....	448	Terre Haute.........	1.3	.0002	.0500	.7902	.8702	19.4	90	4,640	+	1.9	Terre Haute; N.
Aug. 1.....	449	Terre Haute.........	1.2	.0001	.0800	.7980	.8104	18.8	90	3,820	+	1.9	Terre Haute; O.
Aug. 2.....	451	Terre Haute.........	1.2	.0001	.0800	.8460	.6703	20.8	70	3,210	+	1.8	Terre Haute; A.
Aug. 2.....	452	Terre Haute.........	1.2	.0001	.0800	.8060	.5440	14.8	70	3,420	+	1.8	Terre Haute; B.
Aug. 2.....	453	Terre Haute.........	1.0	.0001	.0800	.9760	.7320	20.0	70	3,840	+	1.8	Terre Haute; C.
Aug. 2.....	454	Terre Haute.........	1.0	.0001	.0800	.8460	.6940	19.6	70	3,100	+	1.8	Terre Haute; D.
Aug. 2.....	455	Terre Haute.........	1.0	.0001	.0800	.8460	.7720	18.4	70	4,210	+	1.8	Terre Haute; E.
Aug. 2.....	456	Terre Haute.........	1.4	.0001	.0800	.8140	.7920	20.0	70	4,290	+	1.8	Terre Haute; F.
Aug. 2.....	457	Terre Haute.........	1.0	.0001	.0800	.9670	.8900	20.0	70	3,970	+	1.8	Terre Haute; G.
Aug. 2.....	458	Terre Haute.........	1.2	.0001	.0800	.7860	.7320	19.8	70	4,670	+	1.8	Terre Haute; H.
Aug. 2.....	459	Terre Haute.........	1.2	.0001	.0800	.6670	.8120	20.0	70	3,120	+	1.8	Terre Haute; I.
Aug. 2.....	460	Terre Haute.........	1.2	.0001	.1000	.8460	.9100	20.8	70	2,980	+	1.8	Terre Haute; J.
Aug. 2.....	461	Terre Haute.........	1.2	.0001	.0800	.8881	.8900	20.4	70	3,900	+	1.8	Terre Haute; K.
Aug. 2.....	462	Terre Haute.........	1.0	.0001	.0800	.8760	.7320	20.0	70	4,280	+	1.8	Terre Haute; L.
Aug. 2.....	463	Terre Haute.........	1.2	.0001	.0800	.7120	.8900	20.0	70	4,360	+	1.8	Terre Haute; M.
Aug. 2.....	464	Terre Haute.........	1.2	.0001	.0800	.7020	.7920	19.8	70	4,000	+	1.8	Terre Haute; N.
Aug. 2.....	465	Terre Haute.........	1.2	.0001	.0800	.6980	.7320	20.0	70	3,940	+	1.8	Terre Haute; O.
Aug. 5.....	479	Terre Haute.........	2.9	.0001	.0500	.7891	.6978	21.6	65	2,140	+	1.2	Terre Haute; A.
Aug. 5.....	480	Terre Haute.........	2.8	.0001	.0500	.7460	.7870	21.4	65	2,870	+	1.2	Terre Haute; B.
Aug. 5.....	481	Terre Haute.........	3.2	.0001	.0400	.8460	.8880	20.6	65	2,800	+	1.2	Terre Haute; C.
Aug. 5.....	482	Terre Haute.........	3.4	.0001	.0400	.7980	.8140	21.4	65	2,870	+	1.2	Terre Haute; D.
Aug. 5.....	483	Terre Haute.........	3.2	.0001	.0400	.9210	.9120	20.6	65	2,100	+	1.2	Terre Haute; E.
Aug. 5.....	484	Terre Haute.........	2.8	.0001	.0200	.8620	.7980	20.8	65	2,700	+	1.2	Terre Haute; F.
Aug. 5.....	485	Terre Haute.........	2.6	.0001	.0400	.7870	.8000	20.8	65	2,800	+	1.2	Terre Haute; G.
Aug. 5.....	486	Terre Haute.........	2.4	.0002	.0400	.7650	.7960	21.2	65	2,600	+	1.2	Terre Haute; H.
Aug. 5.....	487	Terre Haute.........	2.6	.0001	.0400	.8280	.8420	20.8	65	2,100	+	1.2	Terre Haute; I.
Aug. 5.....	488	Terre Haute.........	2.8	.0001	.0200	.9900	.8340	20.6	65	2,820	+	1.2	Terre Haute; J.
Aug. 5.....	489	Terre Haute.........	2.9	.0001	.0200	.8730	.9120	20.2	65	2,740	+	1.2	Terre Haute; K.
Aug. 5.....	490	Terre Haute.........	2.8	.0001	.0200	.6960	.8980	20.1	65	2,010	+	1.2	Terre Haute; L.
Aug. 5.....	491	Terre Haute.........	2.4	.0001	.0400	.7140	.9420	20.2	65	2,000	+	1.2	Terre Haute; M.
Aug. 5.....	492	Terre Haute.........	2.8	.0001	.0400	.8230	.8730	20.8	65	2,980	+	1.2	Terre Haute; N.

Aug 5.....	493	Terre Haute.........	2.6	.0001	.0200	.9140	.7980	20.2	65	2,680	+	1.2	Terre Haute; O.
Aug. 6.....	495	Terre Haute to Darwin, Ill.	3.2	.0002	.0200	.8460	.7890	21.2	35	30,000	+	1.1	5 miles below Terre Haute.
Aug. 6.....	496	Terre Haute to Darwin, Ill.	3.4	.0002	.0200	.8070	.7240	21.6	35	40,000	+	1.1	6 miles below Terre Haute.
Aug. 6.....	497	Terre Haute to Darwin, Ill.	3.0	.0001	.0200	.9460	.7180	21.6	35	54,000	+	1.1	7 miles below Terre Haute.
Aug. 6.....	498	Terre Haute to Darwin, Ill.	3.0	.0001	.0200	.9200	.8230	21.2	35	62,000	+	1.1	8 miles below Terre Haute.
Aug. 6.....	499	Terre Haute to Darwin, Ill.	3.0	.0001	.0200	.8960	.8120	20.8	35	70,000	+	1.1	9 miles below Terre Haute.
Aug. 6.....	501	Terre Haute to Darwin, Ill.	2.8	.0001	.0200	.8240	.8670	21.2	35	46,000	+	1.1	10 miles below Terre Haute.
Aug. 6.....	502	Terre Haute to Darwin, Ill.	2.8	.0001	.0400	.8180	.8428	21.6	35	38,000	+	1.1	11 miles below Terre Haute.
Aug. 6.....	503	Terre Haute to Darwin, Ill.	2.8	.0001	.0400	.9100	.7960	22.0	35	42,000	+	1.1	12 miles below Terre Haute.
Aug. 6.....	504	Terre Haute to Darwin, Ill.	3.0	.0001	.0200	.7780	.8210	21.2	35	36,000	+	1.1	13 miles below Terre Haute.
Aug. 6.....	505	Terre Haute to Darwin, Ill.	2.8	.0001	.0400	.6970	.7980	21.6	35	40,000	+	1.1	14 miles below Terre Haute.
Aug. 6.....	506	Terre Haute to Darwin, Ill.	2.8	.0001	.0200	.8240	.8120	21.2	35	54,000	+	1.1	15 miles below Terre Haute.
Aug. 6.....	507	Terre Haute to Darwin, Ill.	2.9	.0001	.0200	.8340	.8260	20.8	35	29,000	+	1.1	16 miles below Terre Haute.
Aug. 6.....	508	Terre Haute to Darwin, Ill.	2.8	.0001	.0200	.9120	.9140	20.8	35	26,000	+	1.1	17 miles below Terre Haute.
Aug. 6.....	509	Terre Haute to Darwin, Ill.	2.8	.0001	.0200	.8970	.8280	20.8	35	20,000	+	1.1	18 miles below Terre Haute.
Aug. 6.....	510	Terre Haute to Darwin, Ill.	2.6	.0001	.0400	.8760	.7940	21.2	35	28,000	+	1.1	19 miles below Terre Haute.
Aug. 6.....	511	Terre Haute to Darwin, Ill.	2.4	.0001	.0200	.9120	.7890	21.2	35	21,200	+	1.1	20 miles below Terre Haute.
Aug. 6.....	512	Darwin, Ill., to Merom, Ind.	2.6	.0001	.0200	.9230	.8120	21.0	35	19,000	+	1.1	21 miles below Terre Haute.
Aug. 7.....	513	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0200	.6668	.8420	20.8	30	22,000	+	0.9	1 mile below Darwin, Ill.
Aug. 7.....	514	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0200	.7120	.7980	21.2	30	26,500	+	0.9	2 miles below Darwin, Ill.
Aug. 7.....	515	Darwin, Ill., to Merom, Ind.	3.0	.0001	.0200	.6980	.7800	21.2	30	18,900	+	0.9	3 miles below Darwin, Ill.
Aug. 7.....	516	Darwin, Ill., to Merom, Ind.	3.0	.0001	.0100	.8860	.5990	21.6	30	24,300	+	0.9	4 miles below Darwin, Ill.
Aug. 7.....	517	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.8970	.6500	21.6	30	34,000	+	0.9	5 miles below Darwin, Ill.
Aug. 7.....	518	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0200	.9230	.7210	21.6	30	27,300	+	0.9	6 miles below Darwin, Ill.
Aug. 7.....	519	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.8470	.6820	21.6	30	19,700	+	0.9	7 miles below Darwin, Ill.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued).

DATE.	Laboratory No.	Sampling Point.	CHEMICAL.							BACTERIAL.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
Aug. 7.....	520	Darwin, Ill., to Merom, Ind.	2.6	.0001	.0200	.9220	.6640	21.6	30	14,200	+	0.9	8 miles below Darwin, Ill.
Aug. 7.....	521	Darwin, Ill., to Merom, Ind.	2.7	.0001	.0100	.8660	.7000	21.8	30	32,200	+	0.9	9 miles below Darwin, Ill.
Aug. 7.....	522	Darwin, Ill., to Merom, Ind.	3.0	.0001	.0200	.8980	.5360	20.0	30	23,000	+	0.9	10 miles below Darwin, Ill.
Aug. 7.....	524	Darwin, Ill., to Merom, Ind.	3.2	.0001	.0100	.9870	.6340	21.2	30	15,900	+	0.9	11 miles below Darwin, Ill.
Aug. 7.....	525	Darwin, Ill., to Merom, Ind.	3.0	.0001	.0100	.9230	.6430	21.6	30	13,000	+	0.9	12 miles below Darwin, Ill.
Aug. 7.....	526	Darwin, Ill., to Merom, Ind.	2.7	.0001	.0100	.9000	.5370	21.2	30	17,000	+	0.9	13 miles below Darwin, Ill.
Aug. 7.....	527	Darwin, Ill., to Merom, Ind.	2.9	.0001	.0100	.8930	.5660	20.8	30	16,100	+	0.9	14 miles below Darwin, Ill.
Aug. 7.....	528	Darwin, Ill., to Merom, Ind.	2.6	.0001	.0100	.8180	.5870	21.6	30	9,500	+	0.9	15 miles below Darwin, Ill.
Aug. 7.....	529	Darwin, Ill., to Merom, Ind.	2.7	.0001	.0100	.8270	.5860	22.0	30	18,800	+	0.9	16 miles below Darwin, Ill.
Aug. 7.....	531	Darwin, Ill., to Merom, Ind.	3.0	.0001	.0100	.7870	.7200	21.2	30	8,500	+	0.9	17 miles below Darwin, Ill.
Aug. 7.....	532	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.7740	.6910	21.6	30	8,900	+	0.9	18 miles below Darwin, Ill.
Aug. 7.....	533	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.8100	.6620	21.6	30	6,400	+	0.9	19 miles below Darwin, Ill.
Aug. 8.....	534	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.8320	.6710	21.6	35	7,200	+	1.0	20 miles below Darwin, Ill.
Aug. 8.....	535	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.8120	.6810	21.6	35	3,200	+	1.0	21 miles below Darwin, Ill.
Aug. 8.....	537	Darwin, Ill., to Merom, Ind.	2.7	.0001	.0100	.9880	.7100	20.9	35	6,300	+	1.0	22 miles below Darwin, Ill.
Aug. 8.....	538	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.8200	.6980	21.2	35	5,400	+	1.0	23 miles below Darwin, Ill.

Aug. 8.....	539	Darwin, Ill., to Merom, Ind.	2.6	.0001	.0100	.9860	.6870	21.2	35	25,300	+	0.9	24 miles below Darwin, Ill.
Aug. 8.....	540	Darwin, Ill., to Merom, Ind.	2.7	.0001	.0100	.8760	.6640	21.0	35	11,500	+	0.9	25 miles below Darwin, Ill.
Aug. 8.....	541	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.9800	.6970	21.2	35	17,500	+	0.9	26 miles below Darwin, Ill.
Aug. 8.....	542	Darwin, Ill., to Merom, Ind.	2.7	.0001	.0200	.9650	.6780	21.6	35	11,000	+	0.9	27 miles below Darwin, Ill.
Aug. 8.....	543	Darwin, Ill., to Merom, Ind.	2.6	.0001	.0200	.9210	.6140	21.6	35	13,000	+	0.9	28 miles below Darwin, Ill.
Aug. 8.....	544	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.9100	.5860	21.6	35	9,200	+	0.9	29 miles below Darwin, Ill.
Aug. 8.....	545	Darwin, Ill., to Merom, Ind.	2.7	.0001	.0100	.9810	.6120	21.2	35	8,760	+	0.9	30 miles below Darwin, Ill.
Aug. 8.....	546	Darwin, Ill., to Merom, Ind.	2.6	.0001	.0100	.9000	.6740	21.4	35	14,200	+	0.9	31 miles below Darwin, Ill.
Aug. 8.....	547	Darwin, Ill., to Merom, Ind.	2.8	.0001	.0100	.9900	.6120	21.8	35	10,000	+	0.9	32 miles below Darwin, Ill.
Aug. 8.....	548	Merom, Ind., to Riverton.	2.7	.0001	.0100	.9430	.6430	20.9	35	9,800	+	0.9	Opposite Merom, Ind.
Aug. 8.....	550	Merom, Ind., to Riverton.	3.6	.0001	.0100	.9420	.9790	19.2	35	18,000	+	0.9	34 miles below Darwin, Ill.
Aug. 12.....	554	Riverton to Vincennes	3.0	.0001	.0200	.9240	.5080	21.2	30	18,000	+	1.4	1 mile below Riverton.
Aug. 12.....	555	Riverton to Vincennes	3.0	.0001	.0200	.8225	.4980	21.6	30	11,200	+	1.4	2 miles below Riverton.
Aug. 12.....	556	Riverton to Vincennes	3.0	.0001	.0200	.8370	.4420	21.6	30	16,000	+	1.4	3 miles below Riverton.
Aug. 12.....	557	Riverton to Vincennes	2.9	.0001	.0200	.9050	.4700	21.2	30	17,000	+	1.4	4 miles below Riverton.
Aug. 12.....	558	Riverton to Vincennes	2.8	.0001	.0200	.9050	.5370	21.2	30	24,000	+	1.4	5 miles below Riverton.
Aug. 12.....	559	Riverton to Vincennes	3.0	.0001	.0200	.8710	.5280	21.6	30	10,000	+	1.4	6 miles below Riverton.
Aug. 12.....	560	Riverton to Vincennes	3.0	.0001	.0200	.8960	.5080	22.0	30	14,400	+	1.4	7 miles below Riverton.
Aug. 12.....	561	Riverton to Vincennes	3.0	.0001	.0200	.9320	.4790	21.6	30	12,000	+	1.4	8 miles below Riverton.
Aug. 12.....	562	Riverton to Vincennes	3.0	.0001	.0200	.8550	.4790	21.8	30	8,800	+	1.4	9 miles below Riverton.
Aug. 12.....	563	Riverton to Vincennes	3.0	.0001	.0200	.9060	.5080	22.0	30	1,200	+	1.4	10 miles below Riverton.
Aug. 12.....	564	Riverton to Vincennes	3.0	.0001	.0200	.8370	.5370	22.0	30	100	+	1.4	11 miles below Riverton.
Aug. 12.....	565	Riverton to Vincennes	3.0	.0001	.0200	.8720	.5280	21.8	30	12,000	+	1.4	12 miles below Riverton.
Aug. 12.....	566	Riverton to Vincennes	3.0	.0001	.0200	.8880	.5470	21.8	30	11,000	+	1.4	13 miles below Riverton.
Aug. 12.....	567	Riverton to Vincennes	2.9	.0001	.0200	.8470	.4510	22.0	30	9,000	+	1.4	14 miles below Riverton.
Aug. 12.....	568	Riverton to Vincennes	3.0	.0001	.0200	.8880	.4220	21.6	30	2,100	+	1.4	15 miles below Riverton.
Aug. 12.....	569	Riverton to Vincennes	3.0	.0001	.0050	.9540	.4610	21.2	30	2,800	+	1.4	16 miles below Riverton.
Aug. 12.....	570	Riverton to Vincennes	3.0	.0001	.0050	.8550	.4790	21.4	30	13,000	+	1.4	17 miles below Riverton.
Aug. 12.....	571	Riverton to Vincennes	3.1	.0001	.0050	.9540	.4790	21.4	30	10,000	+	1.4	18 miles below Riverton.
Aug. 12.....	572	Riverton to Vincennes	3.1	.0001	.0050	.9530	.4610	22.0	30	4,500	+	1.4	19 miles below Riverton.
Aug. 12.....	573	Riverton to Vincennes	3.0	.0001	.0050	.9360	.4610	21.6	30	6,300	+	1.4	20 miles below Riverton.
Aug. 13.....	574	Riverton to Vincennes	3.0	.0001	.0200	.8470	.5380	21.2	30	3,100	+	1.8	21 miles below Riverton.
Aug. 13.....	575	Riverton to Vincennes	3.0	.0001	.0200	.8220	.4890	21.2	30	400	+	1.8	22 miles below Riverton.
Aug. 13.....	577	Riverton to Vincennes	3.0	.0001	.0200	.9380	.4510	21.2	30	48,000	+	1.8	23 miles below Riverton.
Aug. 13.....	578	Riverton to Vincennes	3.0	.0001	.0200	.8560	.4220	21.2	30	400	+	1.8	24 miles below Riverton.
Aug. 13.....	579	Riverton to Vincennes	3.1	.0001	.0200	.8370	.4030	21.4	30	500	+	1.8	25 miles below Riverton.
Aug. 13.....	580	Riverton to Vincennes	3.1	.0001	.0200	.8530	.4790	21.2	30	1,800	+	1.8	26 miles below Riverton.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued.)

DATE.	Laboratory No.	Sampling Point.	CHEMICAL.							BACTERIAL.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
Aug. 13.....	581	Riverton to Vincennes	3.1	.0001	.0200	.8420	.5280	21.6	70	2,500	+	1.8	27 miles below Riverton.
Aug. 13.....	582	Riverton to Vincennes	3.2	.0001	.0200	.8370	.5280	21.2	70	1,000	+	1.8	28 miles below Riverton.
Aug. 13.....	583	Riverton to Vincennes	3.2	.0001	.0200	.8370	.5280	21.2	70	4,700	+	1.8	29 miles below Riverton.
Aug. 13.....	584	Riverton to Vincennes	3.2	.0001	.0050	.8370	.5100	20.6	70	2,020	+	1.8	30 miles below Riverton.
Aug. 13.....	586	Riverton to Vincennes	3.1	.0001	.0200	.8420	.5880	20.6	70	7,500	+	1.8	31 miles below Riverton.
Aug. 13.....	587	Riverton to Vincennes	3.1	.0001	.0050	.8550	.6140	20.8	70	6,600	+	1.8	32 miles below Riverton.
Aug. 13.....	588	Riverton to Vincennes	3.1	.0001	.0050	.8450	.5280	20.4	70	5,000	+	1.8	33 miles below Riverton.
Aug. 13.....	589	Riverton to Vincennes	3.0	Trace.	.0050	.8370	.5760	20.8	70	2,560	+	1.8	34 miles below Riverton.
Aug. 13.....	590	Riverton to Vincennes	3.0	Trace.	.0050	.8420	.4950	20.4	70	3,000	+	1.8	35 miles below Riverton.
Aug. 13.....	591	Riverton to Vincennes	2.9	Trace.	.0050	.8550	.4800	20.4	70	19,400	+	1.8	36 miles below Riverton.
Aug. 15.....	592	Riverton to Vincennes	2.6	Trace.	.0200	.8290	1.1000	17.2	250	43,000	+	3.9	Vincennes, A; 2 miles above wagon bridge.
Aug. 15.....	593	Riverton to Vincennes	2.8	Trace.	.0200	.7650	.9250	17.4	250	26,000	+	3.9	Vincennes, B; 1½ miles above wagon bridge.
Aug. 15.....	594	Riverton to Vincennes	2.8	Trace.	.0200	.9200	.9750	17.2	250	900	+	3.9	Vincennes, C; 1 mile above wagon bridge.
Aug. 15.....	595	Riverton to Vincennes	2.9	Trace.	.0200	8520	.9250	17.2	250	4,400	+	3.9	Vincennes, D; ½ mile above wagon bridge.
Aug. 15.....	596	Riverton to Vincennes	2.8	Trace.	.0200	.8370	.8000	17.2	250	700	+	3.9	Vincennes, E; beneath wagon bridge.
Aug. 15.....	597	Riverton to Vincennes	2.8	Trace.	.0200	.8690	.7500	17.4	250	1,000	+	3.9	Vincennes, F; ½ mile below wagon bridge.
Aug. 15.....	598	Riverton to Vincennes	2.8	Trace.	.0200	.9880	1.0000	17.5	250	6,500	+	3.9	Vincennes, G; 1 mile below wagon bridge.
Aug. 15.....	599	Riverton to Vincennes	2.8	Trace.	.0200	.9980	.9250	17.4	250	30,000	+	3.9	Vincennes, H; 1½ miles below bridge.
Aug. 15.....	600	Riverton to Vincennes	2.9	Trace.	.0200	.9050	1.0000	17.4	250	78,000	+	3.9	Vincennes, I; 2 miles below wagon bridge.
Aug. 17.....	618	Riverton to Vincennes	2.0	Trace.	Trace.	.6940	.7520	12.8	285	2,200	+	3.7	Vincennes; A.
Aug. 17.....	619	Vincennes...........	2.0	Trace.	Trace.	.7800	.8380	12.4	285	1,500	+	3.7	Vincennes; B.
Aug. 17.....	620	Vincennes...........	2.0	Trace.	Trace.	.7190	.7140	13.0	285	6,500	+	3.7	Vincennes; C.
Aug. 17.....	621	Vincennes...........	2.0	Trace.	Trace.	.7190	.7880	13.0	285	8,000	+	3.7	Vincennes; D.
Aug. 17.....	622	Vincennes...........	2.0	Trace.	Trace.	.6940	.8770	12.6	285	2,000	+	3.7	Vincennes; E.
Aug. 17.....	623	Vincennes...........	2.0	Trace.	Trace.	.7450	.7260	12.6	285	4,700	+	3.7	Vincennes; F.
Aug. 17.....	624	Vincennes...........	1.8	Trace.	Trace.	.7610	.8380	12.6	285	16,300	+	3.7	Vincennes; G.
Aug. 17.....	625	Vincennes...........	1.9	Trace.	Trace.	.6840	8020	13.0	285	3,600	+	3.7	Vincennes; H.
Aug. 17.....	626	Vincennes...........	1.8	Trace.	Trace.	.7190	.7770	12.6	285	90,000	+	3.7	Vincennes; I.
Aug. 19.....	630	Vincennes...........	2.5	.0001	.0200	.2630	.7190	16.8	125	2,000	+	2.8	Vincennes; A.
Aug. 19.....	631	Vincennes...........	2.5	.0001	.0200	.2500	.6620	17.0	125	3,200	+	2.8	Vincennes; B.
Aug. 19.....	632	Vincennes...........	2.5	.0001	.0200	.2370	.7360	17.2	125	5,860	+	2.8	Vincennes; C.
Aug. 19.....	633	Vincennes...........	2.5	.0001	.0200	.2370	.7530	16.8	125	7,200	+	2.8	Vincennes; D.

Aug. 19.....	634	Vincennes...........	2.5	.0001	.0200	.2125	.7530	16.8	125	4,100	+	2.8	Vincennes; E.
Aug. 19.....	635	Vincennes...........	2.5	.0001	.0200	.2870	.7530	16.6	125	5,100	+	2.8	Vincennes; F.
Aug. 19.....	636	Vincennes...........	2.6	.0001	.0200	.2250	.7700	16.8	125	12,000	+	2.8	Vincennes; G.
Aug. 19.....	637	Vincennes...........	2.5	.0001	.0200	.2500	.7250	17.0	125	4,200	+	2.8	Vincennes; H.
Aug. 19.....	638	Vincennes...........	2.5	.0001	.0200	.2250	.7530	16.8	125	7,000	+	2.8	Vincennes; I.
Aug. 20.....	639	Vincennes to Mt. Carmel.	3.2	.0001	Trace.	.8310	.6610	17.4	138	4,200	+	2.5	2 miles below Vincennes.
Aug. 20.....	640	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.7570	.4740	17.6	139	3,910	+	2.5	3 miles below Vincennes.
Aug. 20.....	641	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.7690	.4740	17.6	138	3,840	+	2.5	4 miles below Vincennes.
Aug. 20.....	642	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.7540	.4610	17.6	138	3,240	+	2.5	5 miles below Vincennes.
Aug. 20.....	644	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.7860	.4100	17.4	138	2,940	+	2.5	6 miles below Vincennes.
Aug. 20.....	645	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.7620	.4720	17.6	138	2,000	+	2.5	7 miles below Vincennes.
Aug. 20.....	646	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.7370	.4280	17.6	138	2,670	+	2.5	8 miles below Vincennes.
Aug. 20.....	647	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.7120	.4500	17.8	138	1,970	+	2.5	9 miles below Vincennes.
Aug. 20.....	648	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.7030	.4640	18.0	138	2,100	+	2.5	10 miles below Vincennes.
Aug. 20.....	649	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.6870	.4270	18.0	138	1,900	+	2.5	11 miles below Vincennes.
Aug. 20.....	650	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.6870	.4310	17.4	138	980	+	2.5	12 miles below Vincennes.
Aug. 20.....	651	Vincennes to Mt. Carmel.	3.7	.0001	.0200	.6840	.4320	17.2	138	830	+	2.5	13 miles below Vincennes.
Aug. 20.....	652	Vincennes to Mt. Carmel.	3.6	.0001	.0200	.6780	.4230	17.2	138	764	+	2.5	14 miles below Vincennes.
Aug. 20.....	653	Vincennes to Mt. Carmel.	3.6	.0001	.0200	.6690	.4510	17.0	138	820	+	2.5	15 miles below Vincennes.
Aug. 21.....	654	Vincennes to Mt. Carmel.	8.5	.0001	.0200	.6430	1.6200	15.2	260	1,000	+	7.9	16 miles below Vincennes.
Aug. 21.....	655	Vincennes to Mt. Carmel.	8.8	.0001	.0200	.6460	1.6200	15.4	260	3,000	+	7.9	17 miles below Vincennes.
Aug. 21.....	656	Vincennes to Mt. Carmel.	9.0	.0001	.0200	.6540	1.5400	15.4	260	4,200	+	7.9	18 miles below Vincennes.
Aug. 21.....	657	Vincennes to Mt. Carmel.	9.0	.0001	.0200	.6440	1.7400	15.2	260	6,400	+	7.9	19 miles below Vincennes.
Aug. 21.....	658	Vincennes to Mt. Carmel.	9.1	.0001	.0200	.6540	1.4100	15.0	260	3,800	+	7.9	20 miles below Vincennes.
Aug. 21.....	659	Vincennes to Mt. Carmel.	8.8	.0001	.0200	.6540	1.5100	15.4	260	2,700	+	7.9	21 miles below Vincennes.
Aug. 21.....	660	Vincennes to Mt. Carmel.	9.5	.0001	.0200	.6280	1.2400	15.6	260	3,100	+	7.9	22 miles below Vincennes
Aug. 21.....	661	Vincennes to Mt. Carmel.	10.0	.0001	.0200	.6210	1.4000	15.4	260	3,200	+	7.9	23 miles below Vincennes.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued.)

DATE.	Laboratory No.	Sampling Point.	CHEMICAL.							BACTERIAL.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
Aug. 13.....	581	Riverton to Vincennes	3.1	.0001	.0200	.8420	.5280	21.6	70	2,500	+	1.8	27 miles below Riverton.
Aug. 13.....	582	Riverton to Vincennes	3.2	.0001	.0200	.8370	.5280	21.2	70	1,000	+	1.8	28 miles below Riverton.
Aug. 13.....	583	Riverton to Vincennes	3.2	.0001	.0200	.8370	.5280	21.2	70	4,700	+	1.8	29 miles below Riverton.
Aug. 13.....	584	Riverton to Vincennes	3.2	.0001	.0050	.8370	.5100	20.6	70	2,020	+	1.8	30 miles below Riverton.
Aug. 13.....	586	Riverton to Vincennes	3.1	.0001	.0200	.8420	.5880	20.6	70	7,500	+	1.8	31 miles below Riverton.
Aug. 13.....	587	Riverton to Vincennes	3.1	.0001	.0050	.8550	.6140	20.8	70	6,600	+	1.8	32 miles below Riverton.
Aug. 13.....	588	Riverton to Vincennes	3.1	.0001	.0050	.8450	.5280	20.4	70	5,000	+	1.8	33 miles below Riverton.
Aug. 13.....	589	Riverton to Vincennes	3.0	Trace.	.0050	.8370	.5760	20.8	70	2,560	+	1.8	34 miles below Riverton.
Aug. 13.....	590	Riverton to Vincennes	3.0	Trace.	.0050	.8420	.4950	20.4	70	3,000	+	1.8	35 miles below Riverton.
Aug. 13.....	591	Riverton to Vincennes	2.9	Trace.	.0050	.8550	.4800	20.4	70	19,400	+	1.8	36 miles below Riverton.
Aug. 15.....	592	Riverton to Vincennes	2.6	Trace.	.0200	.8290	1.1000	17.2	250	43,000	+	3.9	Vincennes, A; 2 miles above wagon bridge.
Aug. 15.....	593	Riverton to Vincennes	2.8	Trace.	.0200	.7650	.9250	17.4	250	26,000	+	3.9	Vincennes, B; 1½ miles above wagon bridge.
Aug. 15.....	594	Riverton to Vincennes	2.8	Trace.	.0200	.9200	.9750	17.2	250	900	+	3.9	Vincennes, C; 1 mile above wagon bridge.
Aug. 15.....	595	Riverton to Vincennes	2.9	Trace.	.0200	8520	.9250	17.2	250	4,400	+	3.9	Vincennes, D; ½ mile above wagon bridge.
Aug. 15.....	596	Riverton to Vincennes	2.8	Trace.	.0200	.8370	.8000	17.2	250	700	+	3.9	Vincennes, E; beneath wagon bridge.
Aug. 15.....	597	Riverton to Vincennes	2.8	Trace.	.0200	.8690	.7500	17.4	250	1,000	+	3.9	Vincennes, F; ½ mile below wagon bridge.
Aug. 15.....	598	Riverton to Vincennes	2.8	Trace.	.0200	.9880	1.0000	17.5	250	6,500	+	3.9	Vincennes, G; 1 mile below wagon bridge.
Aug. 15.....	599	Riverton to Vincennes	2.8	Trace.	.0200	.9980	.9250	17.4	250	30,000	+	3.9	Vincennes, H; 1½ miles below bridge.
Aug. 15.....	600	Riverton to Vincennes	2.9	Trace.	.0200	.9050	1.0000	17.4	250	78,000	+	3.9	Vincennes, I; 2 miles below wagon bridge.
Aug. 17.....	618	Riverton to Vincennes	2.0	Trace.	Trace.	.6940	.7520	12.8	285	2,200	+	3.7	Vincennes; A.
Aug. 17.....	619	Vincennes..........	2.0	Trace.	Trace.	.7800	.8380	12.4	285	1,500	+	3.7	Vincennes; B.
Aug. 17.....	620	Vincennes..........	2.0	Trace.	Trace.	.7190	.7140	13.0	285	6,500	+	3.7	Vincennes; C.
Aug. 17.....	621	Vincennes..........	2.0	Trace.	Trace.	.7190	.7880	13.0	285	8,000	+	3.7	Vincennes; D.
Aug. 17.....	622	Vincennes..........	2.0	Trace.	Trace.	.6940	.8770	12.6	285	2,000	+	3.7	Vincennes; E.
Aug. 17.....	623	Vincennes..........	2.0	Trace.	Trace.	.7450	.7260	12.6	285	4,700	+	3.7	Vincennes; F.
Aug. 17.....	624	Vincennes..........	1.8	Trace.	Trace.	.7610	.8380	12.6	285	16,300	+	3.7	Vincennes; G.
Aug. 17.....	625	Vincennes..........	1.9	Trace.	Trace.	.6840	8020	13.0	285	3,600	+	3.7	Vincennes; H.
Aug. 17.....	626	Vincennes..........	1.8	Trace.	Trace.	.7190	.7770	12.6	285	90,000	+	3.7	Vincennes; I.
Aug. 19.....	630	Vincennes..........	2.5	.0001	.0200	.2630	.7190	16.8	125	2,000	+	2.8	Vincennes; A.
Aug. 19.....	631	Vincennes..........	2.5	.0001	.0200	.2500	.6620	17.0	125	3,200	+	2.8	Vincennes; B.
Aug. 19.....	632	Vincennes..........	2.5	.0001	.0200	.2370	.7360	17.2	125	5,860	+	2.8	Vincennes; C.
Aug. 19.....	633	Vincennes..........	2.5	.0001	.0200	.2370	.7530	16.8	125	7,200	+	2.8	Vincennes; D.

Aug. 19.....	634	Vincennes...........	2.5	.0001	.0200	.2125	.7530	16.8	125	4,100	+	2.8	Vincennes; E.
Aug. 19.....	635	Vincennes...........	2.5	.0001	.0200	.2870	.7530	16.6	125	5,100	+	2.8	Vincennes; F.
Aug. 19.....	636	Vincennes...........	2.6	.0001	.0200	.2250	.7700	16.8	125	12,000	+	2.8	Vincennes; G.
Aug. 19.....	637	Vincennes...........	2.5	.0001	.0200	.2500	.7250	17.0	125	4,200	+	2.8	Vincennes; H.
Aug. 19.....	638	Vincennes...........	2.5	.0001	.0200	.2250	.7530	16.8	125	7,000	+	2.8	Vincennes; I.
Aug. 20.....	639	Vincennes to Mt. Carmel.	3.2	.0001	Trace.	.8310	.6610	17.4	138	4,200	+	2.5	2 miles below Vincennes.
Aug. 20.....	640	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.7570	.4740	17.6	139	3,910	+	2.5	3 miles below Vincennes.
Aug. 20.....	641	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.7690	.4740	17.6	138	3,840	+	2.5	4 miles below Vincennes.
Aug. 20.....	642	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.7540	.4610	17.6	138	3,240	+	2.5	5 miles below Vincennes.
Aug. 20.....	644	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.7860	.4100	17.4	138	2,940	+	2.5	6 miles below Vincennes.
Aug. 20.....	645	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.7620	.4720	17.6	138	2,000	+	2.5	7 miles below Vincennes.
Aug. 20.....	646	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.7370	.4280	17.6	138	2,670	+	2.5	8 miles below Vincennes.
Aug. 20.....	647	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.7120	.4500	17.8	138	1,970	+	2.5	9 miles below Vincennes.
Aug. 20.....	648	Vincennes to Mt. Carmel.	3.2	.0001	.0200	.7030	.4640	18.0	138	2,100	+	2.5	10 miles below Vincennes.
Aug. 20.....	649	Vincennes to Mt. Carmel.	3.2	0001	.0200	.6870	.4270	18.0	138	1,900	+	2.5	11 miles below Vincennes.
Aug. 20.....	650	Vincennes to Mt. Carmel.	3.4	.0001	.0200	.6870	.4310	17.4	138	980	+	2.5	12 miles below Vincennes.
Aug. 20.....	651	Vincennes to Mt. Carmel.	3.7	.0001	.0200	.6840	.4320	17.2	138	830	+	2.5	13 miles below Vincennes.
Aug. 20.....	652	Vincennes to Mt. Carmel.	3.6	.0001	.0200	.6780	.4230	17.2	138	764	+	2.5	14 miles below Vincennes.
Aug. 20.....	653	Vincennes to Mt. Carmel.	3.6	.0001	.0200	.6690	.4510	17.0	138	820	+	2.5	15 miles below Vincennes.
Aug. 21.....	654	Vincennes to Mt. Carmel.	8.5	.0001	.0200	.6430	1.6200	15.2	260	1,000	+	7.9	16 miles below Vincennes.
Aug. 21.....	655	Vincennes to Mt. Carmel.	8.8	.0001	.0200	.6460	1.6200	15.4	260	3,000	+	7.9	17 miles below Vincennes.
Aug. 21.....	656	Vincennes to Mt. Carmel.	9.0	.0001	.0200	.6540	1.5400	15.4	260	4,200	+	7.9	18 miles below Vincennes.
Aug. 21.....	657	Vincennes to Mt. Carmel.	9.0	.0001	.0200	.6440	1.7400	15.2	260	6,400	+	7.9	19 miles below Vincennes.
Aug. 21.....	658	Vincennes to Mt. Carmel.	9.1	.0001	.0200	.6540	1.4100	15.0	260	3,800	+	7.9	20 miles below Vincennes.
Aug. 21.....	659	Vincennes to Mt. Carmel.	8.8	.0001	.0200	.6540	1.5100	15.4	260	2,700	+	7.9	21 miles below Vincennes.
Aug. 21.....	660	Vincennes to Mt. Carmel.	9.5	.0001	.0200	.6280	1.2400	15.6	260	3,100	+	7.9	22 miles below Vincennes
Aug. 21.....	661	Vincennes to Mt. Carmel.	10.0	.0001	.0200	.6210	1.4000	15.4	260	3,200	+	7.9	23 miles below Vincennes.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued.)

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli Presumtive Test.		
Aug. 21.....	662	Vincennes to Mt. Carmel.	10.0	.0001	.0200	.5870	.5480	15.6	260	2,120	+	7.9	24 miles below Vincennes.
Aug. 21.....	663	Vincennes to Mt. Carmel.	9.2	.0001	.0200	.6040	.6220	15.6	260	4,000	+	7.9	25 miles below Vincennes.
Aug. 21.....	664	Vincennes to Mt. Carmel.	9.2	.0001	.0200	.6460	.6130	15.2	260	2,620	+	7.9	26 miles below Vincennes.
Aug. 21.....	665	Vincennes to Mt. Carmel.	8.8	.0001	.0200	.6230	.6220	15.2	260	2,000	+	7.9	27 miles below Vincennes.
Aug. 21.....	666	Vincennes to Mt. Carmel.	8.6	.0001	.0200	.6190	.6580	15.0	260	4,800	+	7.9	28 miles below Vincennes.
Aug. 21.....	667	Vincennes to Mt. Carmel.	7.8	.0001	.0200	.6010	.6970	15.4	260	3,210	+	7.9	29 miles below Vincennes.
Aug. 21.....	668	Vincennes to Mt. Carmel.	6.0	.0001	.0200	.6360	.6580	15.4	260	3,000	+	7.9	30 miles below Vincennes.
Aug. 21.....	669	Vincennes to Mt. Carmel.	5.0	.0001	.0200	.6670	.6230	15.8	260	2,740	+	7.9	31 miles below Vincennes.
Aug. 21.....	670	Vincennes to Mt. Carmel.	4.4	.0001	.0200	.7520	.6010	16.2	260	2,600	+	7.9	32 miles below Vincennes.
Aug. 21.....	671	Vincennes to Mt. Carmel.	4.4	.0001	.0200	.7120	.6500	15.6	260	3,100	+	7.9	33 miles below Vincennes.
Aug. 23.....	673	Mt. Carmel..........	5.4	.0001	.0200	.6780	.9310	15.2	250	2,870	+	8.1	½ mile above White River.
Aug. 23.....	674	Mt. Carmel..........	5.4	.0001	.0200	.7350	.9060	15.2	250	1,980	+	8.1	½ mile below White River.
Aug. 23.....	675	Mt. Carmel..........	1.9	.0001	.0200	.6840	1.0260	14.8	250	2,240	+	8.1	1 mile below White River.
Aug. 23.....	676	Mt. Carmel..........	4.8	.0001	.0200	.7120	.6870	15.2	250	2,000	+	8.1	Mt. Carmel; beneath railroad bridge.
Aug. 23.....	677	Mt. Carmel..........	5.2	.0001	.0200	.7270	.7760	14.8	250	4,280	+	8.1	½ mile below railroad bridge.
Aug. 23.....	678	Mt. Carmel..........	5.2	.0001	.0200	.6680	.7560	15.0	250	3,160	+	8.1	1 mile below railroad bridge.
Aug. 26.....	692	Mt. Carmel..........	1.7	.0001	.0200	.7180	.6890	13.2	175	2,010	+	4.6	¼ mile above dam.
Aug. 26.....	693	Mt. Carmel..........	1.7	.0001	.0400	.6860	.7560	13.4	175	1,970	+	4.6	½ mile above dam.
Aug. 26.....	694	Mt. Carmel..........	1.8	.0001	.0200	.6870	.8140	13.0	175	2,320	+	4.6	¾ miles below dam.
Aug. 26.....	695	Mt. Carmel..........	1.7	.0001	.0200	.7540	.7570	13.2	175	2,000	+	4.6	' mile below dam.
Aug. 27.....	696	Mt. Carmel..........	1.8	.0001	Trace.	.8490	.5630	13.0	175	2,680	+	3.8	Mt. Carmel, A; ¼ mile above White River.
Aug. 27.....	698	Mt. Carmel..........	1.2	.0001	Trace.	.7140	.7140	12.6	175	2,970	+	3.8	Mt. Carmel, B; ¼ mile below White River.
Aug. 27.....	699	Mt. Carmel..........	1.4	Trace.	Trace.	.7540	.7760	12.6	175	3,140	+	3.8	Mt. Carmel, C; ½ mile below White River.

Aug. 27.....	700	Mt. Carmel..........	1.2	Trace.	Trace.	.7520	.7940	13.0	175	4,120	+	3.8	Mt. Carmel, D; 1 mile below White River.
Aug. 27.....	701	Mt. Carmel..........	1.8	.0001	Trace.	.7360	.7940	13.0	175	4,120	+	3.8	Mt. Carmel, E; beneath railroad bridge.
Aug. 27.....	702	Mt. Carmel..........	1.8	Trace.	Trace.	.7360	.7760	13.2	175	4,230	+	3.8	Mt. Carmel, F; ½ mile below railroad bridge.
Aug. 27.....	703	Mt. Carmel..........	1.8	.0001	Trace.	.7400	.7180	13.2	175	3,860	+	3.8	Mt. Carmel, G; 1 mile below railroad bridge.
Aug. 27.....	704	Mt. Carmel..........	1.9	.0001	Trace.	.7210	.7240	13.2	175	3,100	+	3.8	Mt. Carmel, H; 1½ miles below railroad bridge.
Aug. 28.....	706	Mt. Carmel..........	2.0	.0001	.0400	.7260	.8540	15.4	160	3,870	+	3.3	Mt. Carmel; A.
Aug. 28.....	707	Mt. Carmel..........	1.8	.0001	.0200	.7200	.8420	15.2	160	3,100	+	3.3	Mt. Carmel; B.
Aug. 28.....	708	Mt. Carmel	1.8	.0001	.0200	.7280	.8420	16.0	160	2,890	+	3.3	Mt. Carmel; C.
Aug. 28.....	709	Mt. Carmel..........	1.8	.0001	.0400	.7040	.8520	15.8	160	3,240	+	3.3	Mt. Carmel; D.
Aug. 28.....	710	Mt. Carmel..........	1.9	.0001	.0400	.8200	.7560	16.0	160	3,000	+	3.3	Mt. Carmel; E.
Aug. 28.....	711	Mt. Carmel..........	1.8	.0001	.0400	.7780	.8340	15.6	160	3,130	+	3.3	Mt. Carmel; F.
Aug. 28.....	712	Mt. Carmel..........	1.8	.0001	.0400	.7420	.8640	15.6	160	2,940	+	3.3	Mt. Carmel; G.
Aug. 29.....	718	Mt. Carmel..........	1.8	.0001	.0400	.7300	.6860	12.8	127	3,120	+	3.0	Mt. Carmel; A.
Aug. 29.....	719	Mt. Carmel..........	1.8	.0001	.0400	.7180	.6720	12.8	127	3,120	+	3.0	Mt. Carmel; B.
Aug. 29.....	720	Mt. Carmel..........	1.9	.0001	.0400	.7020	.6980	12.6	127	1,980	+	2.5	Mt. Carmel; C.
Aug. 29.....	721	Mt. Carmel..........	1.9	.0001	.0600	.7140	.6760	12.8	127	2,420	+	2.5	Mt. Carmel; D.
Aug. 29.....	722	Mt. Carmel..........	1.8	.0002	.0600	.7380	.6860	13.0	127	2,720	+	2.5	Mt. Carmel; E.
Aug. 29.....	723	Mt. Carmel..........	1.8	.0002	.0600	.7200	.6800	13.2	127	2,640	+	2.5	Mt. Carmel; F.
Aug. 29.....	724	Mt. Carmel..........	1.8	.0002	.0600	.7020	.6840	13.0	127	2,180	+	2.5	Mt. Carmel; G.
Sept. 4.....	731	Mt. Carmel to Grayville.	2.2	.0001	.0200	.7780	.7210	18.0	65	2,860	+	1.5	3 miles below Mt. Carmel.
Sept. 4.....	732	Mt. Carmel to Grayville.	2.2	.0001	.0200	.7670	.6870	18.1	65	3,210	+	1.5	4 miles below Mt. Carmel.
Sept. 4.....	733	Mt. Carmel to Grayville.	2.2	.0001	.0200	.7700	.6420	18.2	65	2,220	+	1.5	5 miles below Mt. Carmel.
Sept. 4.....	734	Mt. Carmel to Grayville.	2.2	.0001	.0200	.7700	.6620	17.8	65	2,600	+	1.5	6 miles below Mt. Carmel.
Sept. 4.....	735	Mt. Carmel to Grayville.	2.1	.0001	.0200	.7600	.6710	17.9	65	2,000	+	1.5	7 miles below Mt. Carmel.
Sept. 4.....	736	Mt. Carmel to Grayville.	2.0	.0001	.0200	.7540	.6880	17.8	65	2,120	+	1.5	8 miles below Mt. Carmel.
Sept. 4.....	737	Mt. Carmel to Grayville.	2.1	.0001	.0200	.9280	.6420	17.8	65	2,190	+	1.5	9 miles below Mt. Carmel.
Sept. 4.....	738	Mt. Carmel to Grayville.	2.1	.0001	.0200	.9100	.6610	18.0	65	2,480	+	1.5	10 miles below Mt. Carmel.
Sept. 4.....	739	Mt. Carmel to Grayville.	2.1	.0001	.0200	.8920	.6720	18.1	65	2,760	+	1.5	11 miles below Mt. Carmel.
Sept. 4.....	740	Mt. Carmel to Grayville.	2.2	.0001	.0200	.8760	.6420	18.2	65	2,860	+	1.5	12 miles below Mt. Carmel.
Sept. 4.....	741	Mt. Carmel to Grayville.	2.1	.0001	.0200	.8240	.6240	18.4	65	2,870	+	1.5	13 miles below Mt. Carmel.
Sept. 4.....	742	Mt. Carmel to Grayville.	2.1	.0001	.0200	.8100	.6800	18.6	65	2,680	+	1.5	14 miles below Mt. Carmel.
Sept. 5.....	743	Mt. Carmel to Grayville.	2.6	Trace.	.0200	.7790	.6970	18.4	40	2,420	+	1.4	15 miles below Mt. Carmel.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued.)

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli Presumtive Test.		
Sept. 5.....	744	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7600	.6840	18.4	40	2,110	+	1.4	16 miles below Mt. Carmel.
Sept. 5.....	745	Mt. Carmel to Grayville.	2.7	.0001	.0200	.7670	.6120	18.4	40	2,020	+	1.4	17 miles below Mt. Carmel.
Sept. 5.....	746	Mt. Carmel to Grayville.	2.6	Trace.	.0200	.7670	.6600	18.2	40	1,980	+	1.4	18 miles below Mt. Carmel.
Sept. 5.....	747	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7540	.6980	18.4	40	1,980	+	1.4	19 miles below Mt. Carmel.
Sept. 5.....	748	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7670	.7120	18.4	40	2,100	+	1.4	20 miles below Mt. Carmel.
Sept. 5.....	749	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7700	.6980	18.4	40	2,200	+	1.4	21 miles below Mt. Carmel.
Sept. 5.....	750	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7670	.6870	18.4	40	1,980	+	1.4	22 miles below Mt. Carmel.
Sept. 5.....	751	Mt. Carmel to Grayville.	2.6	Trace.	.0200	.7970	.6720	18.4	40	1,850	+	1.4	23 miles below Mt. Carmel.
Sept. 5.....	752	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7670	.6540	18.4	40	1,900	+	1.4	24 miles below Mt. Carmel.
Sept. 5.....	753	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7760	.6230	18.4	40	2,000	+	1.4	25 miles below Mt. Carmel.
Sept. 5.....	754	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7880	.6530	18.2	40	1,800	+	1.4	26 miles below Mt. Carmel.
Sept. 5.....	755	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7880	.6760	18.4	40	1,900	+	1.4	27 miles below Mt. Carmel.
Sept. 5.....	756	Mt. Carmel to Grayville.	2.6	Trace.	.0200	.8100	.6870	18.4	40	1,750	+	1.4	28 miles below Mt. Carmel.
Sept. 5.....	757	Mt. Carmel to Grayville.	2.6	.0001	.0200	.7960	.6260	18.4	40	1,600	+	1.4	Opposite Grayville, Ill.
Sept. 6.....	758	Mt. Carmel to Grayville.	2.6	Trace.	Trace.	.7380	.6460	18.6	40	1,700	+	1.3	1 mile below Grayville, Ill.
Sept. 6.....	759	Mt. Carmel to Grayville.	2.6	Trace.	Trace.	.6790	.6370	18.6	40	1,800	+	1.3	2 miles below Grayville, Ill.

Sept. 6.....	760	Mt. Carmel to Grayville.	2.6	Trace.	Trace.	.7520	.6820	18.6	40	1,900	+	1.3	3 miles below Grayville, Ill.
Sept. 6.....	761	Mt. Carmel to Grayville.	2.7	Trace.	Trace.	.7690	.6600	18.6	30	1,800	+	1.3	4 miles below Grayville, Ill.
Sept. 6.....	762	Mt. Carmel to Grayville.	2.6	Trace.	Trace.	.7640	.6640	18.6	30	1,900	+	1.3	5 miles below Grayville, Ill.
Sept. 6.....	763	Mt. Carmel to Grayville.	2.6	Trace.	Trace.	.7960	.6820	18.6	30	1,920	+	1.3	6 miles below Grayville, Ill.
Sept. 6.....	764	Grayville to New Harmony.	2.6	Trace.	Trace.	.8210	.6740	18.4	30	2,000	+	1.3	7 miles below Grayville.
Sept. 6.....	765	Grayville to New Harmony.	2.6	Trace.	Trace.	.8140	.6740	18.6	30	1,840	+	1.3	8 miles below Grayville.
Sept. 6.....	767	Grayville to New Harmony.	2.6	Trace.	Trace.	.8120	.7360	18.8	30	1,750	+	1.3	9 miles below Grayville.
Sept. 6.....	768	Grayville to New Harmony.	2.7	Trace.	Trace.	.8140	.7200	18.7	30	1,780	+	1.3	10 miles below Grayville.
Sept 6.....	769	Grayville to New Harmony.	2.4	Trace.	Trace.	.8340	.7290	18.4	30	1,980	+	1.3	11 miles below Grayville.
Sept. 6.....	770	Grayville to New Harmony.	2.6	Trace.	Trace.	.8210	.7100	18.6	30	2,100	+	1.3	12 miles below Grayville.
Sept. 6.....	771	Grayville to New Harmony.	2.6	Trace.	Trace.	.8260	.7010	18.4	30	2,000	+	1.3	13 miles below Grayville.
Sept. 6.....	772	Grayville to New Harmony.	2.6	Trace.	Trace.	.8260	.7010	18.4	30	2,000	+	1.3	Opposite New Harmony.
Sept. 6.....	773	Grayville to New Harmony.	2.7	Trace.	Trace.	.7260	.7260	19.0	30	2,000	+	1.3	½ mile below Old River.
Sept. 9.....	780	New Harmony to Ohio River.	2.6	.0001	Trace.	.7640	.8210	18.8	30	1,780	+	1.0	1 mile below New Harmony.
Sept. 9.....	781	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	19.8	30	....	....	1.0	1 mile below dam.
Sept. 10.....	782	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	19.8	30	....	....	1.0	Head of Mink Island.
Sept. 10.....	783	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	19.8	30	....	....	0.9	Foot of Mink Island.
Sept. 10.....	786	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	20.0	30	....	....	0.9	Warwick's Ripple.
Sept. 10.....	787	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	19.8	30	....	....	0.9	Head Twin Sister Island, number 1.
Sept. 10.....	788	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	20.0	30	....	....	0.9	Foot Twin Sister Island, number 2.
Sept. 10.....	789	New Harmony to Ohio River.	2.7	Trace.	Trace.	....	....	19.8	30	....	....	0.9	1 mile below Twin Sister, 2.
Sept. 10.....	790	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	20.0	30	....	....	0.9	Opposite Maunie, Ill.
Sept. 10.....	791	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	20.0	30	....	....	0.9	1 mile below Maunie, Ill.
Sept. 10.....	792	New Harmony to Ohio River.	3.0	Trace.	Trace,	....	....	19.8	30	....	....	.9	Grand Chain Chute.

TABLE 15.

SAMPLES FROM THE WABASH RIVER.

(Continued).

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli Presumtive Test.		
Sept. 10.....	793	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	19.8	30	....	....	.9	L. & N. railroad bridge.
Sept. 10.....	794	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	19.8	30	....	....	.9	1 mile below railroad bridge.
Sept. 10.....	796	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	20.0	30	....	....	.9	1 mile below Big Creek.
Sept. 10.....	797	New Harmony to Ohio River.	2.9	Trace.	Trace.	....	....	20.1	30	....	....	.9	2 miles below Big Creek.
Sept. 10.....	798	New Harmony to Ohio River.	2.9	Trace.	Trace.	....	....	20.0	30	....	....	.9	Little Chain Chute.
Sept. 10.....	799	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	20.0	30	....	....	.9	1 mile below Little Chute.
Sept. 10.....	800	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	20.0	30	....	....	.9	1 mile above Ashworth Ferry.
Sept. 10.....	801	New Harmony to Ohio River.	3.0	Trace.	Trace.	.9620	.7160	20.0	30	....	....	.9	Ashworth Ferry.
Sept. 10.....	802	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	20.0	30	....	....	.9	1 mile below Ashworth Ferry.
Sept. 10.....	803	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	19.8	30	....	....	.9	2 miles below Ashworth Ferry.
Sept. 10.....	804	New Harmony to Ohio River.	2.9	Trace.	Trace.	....	....	19.8	30	....	....	.9	3 miles below Ashworth Ferry.
Sept. 10.....	805	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	20.0	30	....	....	.9	4 miles below Ashworth Ferry.
Sept. 10.....	806	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	19.8	30	....	....	.9	5 miles below Ashworth Ferry.
Sept. 10.....	807	New Harmony to Ohio River.	2.9	Trace.	Trace.	....	....	20.0	30	....	....	.9	6 miles below Ashworth Ferry.
Sept. 10.....	808	New Harmony to Ohio River.	2.9	Trace.	Trace.	....	....	19.8	30	....	....	.9	7 miles below Ashworth Ferry
Sept. 10.....	810	New Harmony to Ohio River.	2.7	Trace.	Trace.	....	....	19.4	30	....	....	.9	1 mile below Little Wabash.

Sept. 10.....	811	New Harmony to Ohio River.	2.6	Trace.	Trace.	....	....	19.6	30	....	....	.9	Head of Raglan Island.
Sept. 10.....	812	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	19.8	30	....	....	.9	Foot of Raglan Island.
Sept. 10.....	813	New Harmony to Ohio River.	2.9	Trace.	Trace.	....	....	20.0	30	....	....	.9	1 mile below Raglan Island.
Sept. 10.....	814	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	20.2	30	....	....	.9	Head of Mackey's Bar.
Sept. 10.....	815	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	20.3	30	....	....	.9	1 mile below Mackey's Bar.
Sept. 10.....	816	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	20.0	30	....	....	.9	2 miles below Mackey's Bar.
Sept. 10.....	817	New Harmony to Ohio River.	2.9	Trace.	Trace.	.8680	.7460	20.0	30	....	....	.9	3 miles below Mackey's Bar.
Sept. 10.....	818	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	20.0	30	....	....	.9	4 miles below Mackey's Bar.
Sept. 10.....	819	New Harmony to Ohio River.	3.0	Trace.	Trace.	....	....	20.0	30	....	....	.9	5 miles below Mackey's Bar.
Sept. 10.....	820	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	19.8	30	....	....	.9	6 miles below Mackey's Bar.
Sept. 10.....	821	New Harmony to Ohio River.	2.8	Trace.	Trace.	....	....	19.8	30	....	....	.9	7 miles below Mackey's Bar.
Sept. 10.....	822	New Harmony to Ohio River.	2.9	Trace.	Trace.	....	....	19.6	30	....	....	.9	8 miles below Mackey's Bar.
Sept. 10.....	823	Wabash and Ohio Rivers.	3.0	Trace.	Trace.	.8280	.6420	19.4	30	....	....	.9	Mouth of Wabash River.

TABLE 16.

WABASH RIVER SAMPLES—CROSS RIVER.

DATE.	Laboratory No.	Sampling Point.	CHEMICAL.							BACTERIAL.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
June 27.....	132	Lafayette............	1.7	.0003	.0000	.6612	.8194	20.4	Slight.	400,000	+	4.5	Big Four bridge; 25 feet from west bank.
June 27.....	133	Lafayette............	1.2	.0002	.0500	.8200	.6812	20.0	Slight.	7,500	+	4.5	75 feet from west bank.
June 27.....	134	Lafayette............	1.3	.0002	.0500	.6759	.6608	19.6	Slight.	8,900	+	4.5	Middle of stream.
June 27.....	135	Lafayette............	2.1	.0002	.0800	.8200	.6810	20.0	Slight.	24,000	+	4.5	75 feet from east bank.
June 27.....	136	Lafayette............	1.8	.0002	.0500	.8033	.6012	20.4	Slight.	22,000	+	4.5	25 feet from east bank.
July 1.....	163	Attica...............	2.0	.0001	.0600	.7961	.6560	18.8	Slight.	3,730	+	1.9	Public bridge; 25 feet from east bank.
July 1.....	164	Attica...............	2.2	.0001	.0800	.6696	.2295	19.0	Slight.	21,200	+	1.9	Middle of stream.
July 1.....	165	Attica...............	2.0	.0001	.0900	.6016	.6760	22.0	Slight.	3,710	+	1.9	25 feet from west bank.
July 6.....	191	Covington...........	1.5	.0001	.0800	.8035	.7470	19.2	Slight.	8,000	+	1.1	1 mile below Covington; 25 feet from west bank.
July 6.....	192	Covington...........	1.4	.0001	.0800	.8035	.7470	20.0	Slight.	18,000	+	1.1	Middle of stream.
July 6.....	193	Covington...........	1.6	.0001	.0800	.8370	.6862	20.0	Slight.	9,000	+	1.1	50 feet from east bank.
July 6.....	198	Covington...........	1.4	.0001	.0800	.7700	.7614	20.0	Slight.	2,800	+	1.1	25 feet from east bank.
July 8.....	206	Covington...........	1.7	.0001	.0800	.7580	.8140	20.4	Slight.	9,800	+	1.0	1 mile below Covington; 25 feet from west bank.
July 8.....	207	Covington...........	1.7	.0001	.0800	.7860	.7990	20.2	Slight.	3,200	+	1.0	Middle of stream.
July 8.....	208	Covington...........	1.8	.0001	.0800	.8400	.8280	20.4	Slight.	4,000	+	1.0	50 feet from east bank.
July 8.....	209	Covington...........	1.7	.0001	.0800	.7650	.6990	20.4	Slight.	3,280	+	1.0	25 feet from east bank.
July 17.....	269	Montezuma..........	1.8	.0002	.1500	.8140	1.6660	16.4	Dec.	1,000	+	3.7	1 mile above Montezuma; 25 feet from east bank.
July 17.....	270	Montezuma..........	1.8	.0002	.2000	.8120	1.4500	16.0	Dec.	1,200	+	3.7	50 feet from east bank.
July 17.....	271	Montezuma..........	1.9	.0002	.2000	.7870	1.4400	19.6	Dec.	2,000	+	3.7	Middle of stream.
July 17.....	272	Montezuma..........	1.9	.0002	.2000	.7120	1.5484	16.4	Dec.	1,800	+	3.7	1 mile above Montezuma; 50 feet from west bank.
July 17.....	273	Montezuma..........	1.8	.0002	.2000	.7970	1.5582	16.4	Dec.	980	+	3.7	25 feet from west bank.
July 17.....	275	Montezuma..........	1.4	.0002	.2000	.8242	.8820	21.6	Dec.	980	+	3.7	2 miles below Montezuma; 25 feet from east bank.
July 17.....	276	Montezuma..........	1.8	.0001	.1500	.7180	.8520	16.4	Dec.	1,250	+	3.7	50 feet from east bank.
July 17.....	277	Montezuma..........	1.8	.0002	.0800	.7120	1.6270	16.0	Dec.	3,260	+	3.7	Middle of stream.
July 17.....	278	Montezuma..........	1.8	.0002	.2000	.8200	.8410	16.0	Dec.	2,100	+	3.7	50 feet from west bank.
July 17.....	279	Montezuma..........	1.6	.0002	.2000	.8200	.8140	19.0	Dec.	1,700	+	3.7	25 feet from west bank.
July 20.....	302	Montezuma..........	1.2	.0001	.0200	.6860	.4070	15.0	Dec.	3,100	+	2.5	1 mile above Montezuma; 20 feet from east bank.

July 20	303	Montezuma	1.6	.0001	.0800	.8221	.5870	16.6	Dec.	2,890	+	2.5	60 feet from east bank.
July 20	304	Montezuma	1.0	.0001	.1000	.7220	.4400	15.2	Dec.	3,120	+	2.5	Middle of stream.
July 20	305	Montezuma	1.1	.0001	.0800	.8370	.6180	14.0	Dec.	3,420	+	2.5	50 feet from west bank.
July 20	306	Montezuma	1.0	.0001	.0800	.7700	.5240	14.2	Dec.	3,220	+	2.5	25 feet from west bank.
July 20	308	Montezuma	1.0	.0001	.0600	.6460	.2710	14.4	Dec.	2,970	+	2.5	2 miles below Montezuma; 25 feet from east bank.
July 20	309	Montezuma	1.0	.0001	.0600	.6960	.4100	12.8	Dec.	3,460	+	2.5	60 feet from east bank.
July 20	310	Montezuma	1.2	.0001	.0000	.8040	.3850	13.2	Dec.	3,870	+	2.5	Middle of stream.
July 20	311	Montezuma	1.0	.0001	.0700	.7190	.8840	13.2	Dec.	3,230	+	2.5	50 feet from west bank.
July 20	312	Montezuma	1.0	.0001	.0500	.6790	.9310	13.6	Dec.	3,330	+	2.5	20 feet from west bank.
July 25	345	Terre Haute	1.1	.0001	.2700	.5340	.4990	17.6	Slight.	2,100	+	5.9	1 mile above pumping station; 25 feet from west bank.
July 25	346	Terre Haute	1.0	.0001	.0800	.5250	.5580	15.6	Slight.	1,900	+	5.9	75 feet from west bank.
July 25	347	Terre Haute	1.1	.0001	.1000	.5440	.8340	16.0	Slight.	2,300	+	5.9	1 mile above pumping station; middle of stream.
July 25	348	Terre Haute	1.0	.0001	.1400	.5260	.5490	16.0	Slight.	2,400	+	5.9	75 feet from east bank.
July 25	349	Terre Haute	.8	.0001	.1500	.6690	.7940	15.4	Slight.	2,000	+	5.9	25 feet from east bank.
July 25	350	Terre Haute	.8	.0001	.0800	.5350	.8230	16.2	Slight.	2,780	+	5.9	Wabash street bridge; 25 feet from west bank.
July 25	351	Terre Haute	1.0	.0001	.0600	.6960	.7360	15.6	Slight.	2,400	+	5.9	75 feet from west bank.
July 25	352	Terre Haute	1.0	.0001	.1700	.6280	.6560	15.6	Slight.	4,700	+	5.9	Middle of stream.
July 25	353	Terre Haute	1.0	.0001	.1000	.7020	.7060	14.0	Slight.	3,100	+	5.9	75 feet from east bank.
July 25	354	Terre Haute	1.2	.0002	.1000	.8037	.8140	16.0	Slight.	2,900	+	5.9	25 feet from east bank.
July 25	355	Terre Haute	1.1	.0001	.1000	.5440	.5980	17.4	Slight.	2,840	+	5.9	1 mile below Wabash bridge; 25 feet from west bank.
July 25	356	Terre Haute	.8	.0001	.1500	.6180	.5790	16.6	Slight.	3,000	+	5.9	75 feet from west bank.
July 25	357	Terre Haute	1.2	.0001	.1300	.6700	.7550	14.2	Slight.	3,200	+	5.9	Middle of stream.
July 25	358	Terre Haute	1.2	.0001	.1800	.5970	.6560	18.6	Slight.	3,400	+	5.9	75 feet from east bank.
July 25	359	Terre Haute	1.0	.0001	.0200	.7090	.6760	15.6	Slight.	2,600	+	5.9	25 feet from east bank.
July 30	405	Terre Haute	.8	.0001	.0800	.7540	.6170	20.6	120	2,220	+	2.5	1 mile above pumping station; 25 feet from west bank.
July 30	406	Terre Haute	1.0	.0001	.0800	.6770	.8420	19.2	120	2,870	+	2.5	75 feet from west bank.
July 30	407	Terre Haute	1.0	.0001	.0800	.7140	.6750	16.8	120	3,210	+	2.5	Middle of stream.
July 30	408	Terre Haute	1.0	.0001	.0800	.7440	.5480	16.8	120	2,870	+	2.5	75 feet from east bank.
July 30	409	Terre Haute	.8	.0001	.0800	.7710	.6260	17.0	120	3,460	+	2.5	25 feet from east bank.
July 30	410	Terre Haute	1.2	.0001	.0800	.7104	.6260	17.6	120	3,280	+	2.5	Wabash street bridge; 25 feet from west bank.
July 30	411	Terre Haute	1.4	.0001	.0800	.6540	.4890	17.2	120	2,760	+	2.5	Wabash street bridge; 75 feet from west bank.
July 30	412	Terre Haute	1.2	.0002	.0800	.7370	.6850	18.0	120	2,540	+	2.5	Middle of stream.
July 30	413	Terre Haute	1.4	.0001	.0800	.7780	.6670	18.0	120	2,120	+	2.5	75 feet from east bank.
July 30	414	Terre Haute	1.8	.0001	.0800	.7540	.4500	18.2	120	3,260	+	2.5	25 feet from east bank.
July 30	415	Terre Haute	1.8	.0002	.0800	.7770	.6660	18.0	120	3,760	+	2.5	1 mile below Wabash street bridge; 25 feet from west bank.
July 30	416	Terre Haute	1.6	.0001	.0800	.6940	.4880	17.2	120	3,120	+	2.5	75 feet from west bank.
July 30	417	Terre Haute	1.4	.0001	.0800	.7040	.5670	17.8	120	2,870	+	2.5	Middle of stream.
July 30	418	Terre Haute	1.2	.0001	.0800	.7190	.7040	18.0	120	2,620	+	2.5	75 feet from east bank.
July 30	419	Terre Haute	1.0	.0002	.0800	.6030	.5460	17.8	120	2,410	+	2.9	25 feet from east bank.

[illegible]

[illegible]

(Continued.)

Date	Laboratory No.	Sampling Point	Chlorine	Nitrites	Nitrates	Oxygen Dissolved	Oxygen Consumed	Alkalinity	Turbidity	Bacteria [illegible]	[illegible]	[illegible]	Remarks
Aug. 16	604	Vincennes	[illegible]	.0001	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	605	Vincennes	[illegible]	.0001	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	606	Vincennes	[illegible]	.0001	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	607	Vincennes	[illegible]	.0001	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	608	Vincennes	[illegible]	.0001	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	610	Vincennes	[illegible]	Trace	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	611	Vincennes	[illegible]	Trace	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	612	Vincennes	[illegible]	Trace	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	613	Vincennes	[illegible]	Trace	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 16	614	Vincennes	[illegible]	Trace	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	680	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	681	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	682	Mt. Carmel	[illegible]	.0001	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	683	Mt. Carmel	[illegible]	.0001	Trace	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	684	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	685	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	686	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	687	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	688	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 24	689	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 26	690	Mt. Carmel	[illegible]	.0001	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aug. 26	691	Mt. Carmel	[illegible]	.0001	.0200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE 17.

SAMPLES FROM THE WABASH RIVER.

Cross River Samples.

Sample Number.	Set 1. Terre Haute August 5, 1912, at Water Works.		Set 2. Terre Haute August 6, 1912, at Water Works.		Set 3. Terre Haute August 7, 1912. at Water Works.	
	Alkalinity.	Chlorine.	Alkalinity.	Chlorine.	Alkalinity.	Chlorine.
1	20.4	2.6	20.6	2.4	18.8	2.6
2	20.3	2.7	20.6	2.6	18.8	2.4
3	20.4	2.5	21.2	2.4	19.2	3.0
4	20.4	2.6	20.6	2.2	20.0	2.6
5	20.0	2.4	20.4	2.2	20.0	2.4
6	20.4	2.4	20.4	2.2	18.4	2.6
7	21.2	2.4	20.8	2.2	20.0	2.6
8	21.6	2.3	20.4	2.4	20.0	2.6
9	20.6	2.4	20.4	2.4	20.8	2.4
10	20.8	2.4	20.4	2.4	20.6	2.8
11	20.4	2.4	20.6	2.6	21.0	2.6
12	20.4	2.6	20.8	3.0	20.0	2.6

Note: Samples taken across a 300 foot width of channel at approximately equal distances apart, beginning on east side of river.

Cross River Samples.

Sample Number.	Set 1. Riverton, August 10, 1912, 200 Feet Above R. R. Bridge.		Set 2. Vincennes, August 19, 1912, 800 Feet Above R. R. Bridge.		Set 3. Vincennes, August 19, 1912, 300 Feet Below R. R. Bridge.	
	Alkalinity.	Chlorine.	Alkalinity.	Chlorine.	Alkalinity.	Chlorine.
1	20.8	3.0	19.6	2.9	16.6	2.6
2	21.0	2.8	20.0	2.9	16.8	2.5
3	21.0	2.8	19.8	2.9	16.6	2.4
4	21.6	2.8	20.2	3.1	16.4	2.4
5	21.4	2.8	20.0	2.9	16.4	2.4
6	21.4	2.6	19.8	3.0	16.4	2.4
7	21.4	2.7	20.0	3.1	16.2	2.4
8	21.2	2.8	20.0	3.1	16.2	2.4
9	22.0	2.8	20.0	3.0	16.2	2.4
10	21.2	2.8	20.0	3.0	16.3	2.3
11	21.2	2.8	20.0	2.9	16.4	2.3
12	21.6	2.8	20.0	2.9	16.4	2.3

Note: Samples of Set 1 taken across a 600 foot width of channel at approximately equal distances apart. Samples of Sets 2 and 3 taken across 800 foot width of channel at approximately equal distances apart. Sample No. 1 of each set taken on east side of river.

TABLE 17.

SAMPLES FROM THE WABASH RIVER.

Cross River Samples.

(Continued.)

Sample Number.	Set 1. Mt. Carmel, August 27, 1912, 2,000 Feet Below White River.		Set 2. Mt. Carmel, August 27, 1912, 300 Feet Below the R. R. Bridge.		Set 3. Fifteen Miles Below Mt. Carmel.	
	Alkalinity.	Chlorine.	Alkalinity.	Chlorine.	Alkalinity.	Chlorine.
1	12.4	1.1	16.0	2.0	20.1	3.0
2	12.6	1.0	16.0	2.2	20.0	3.0
3	12.8	1.0	15.6	2.2	19.6	3.0
4	12.8	1.6	15.6	2.2	19.4	2.9
5	12.4	1.3	15.2	2.0	19.3	2.8
6	12.6	1.7	15.2	1.9	19.3	2.7
7	11.4	1.1	15.2	1.8	19.0	2.7
8	11.4	1.2	14.6	1.6	18.9	2.8
9	11.6	1.0	13.6	1.4	19.0	2.6
10	12.6	1.6	13.6	1.4	18.9	2.4
11	12.8	1.4	13.2	1.2	18.7	2.2
12	13.0	1.6	12.8	1.3	18.4	2.0

NOTE: Samples taken across a 700 foot width of channel at approximately equal distances apart, beginning on west side of river.

Cross River Samples.

Sample Number.	Set 1. Grayville, September 6, 1912, At Ferry.		Set 2. New Harmony, September 7, 1912, At Ferry.	
	Alkalinity.	Chlorine.	Alkalinity.	Chlorine.
1	18.2	2.6	19.0	3.0
2	18.4	2.5	19.0	2.8
3	18.4	2.6	19.2	2.8
4	18.4	2.6	19.0	2.8
5	18.4	2.7	19.0	2.8
6	18.4	2.6	19.1	2.8
7	18.5	2.6	19.2	2.8
8	18.4	2.4	19.1	2.8
9	18.4	2.3	19.1	2.8
10	18.6	2.4	19.0	2.9
11	18.6	2.4	19.0	2.9
12	18.6	2.4	19.0	2.7

NOTE: Samples taken across a 1,200 foot width of channel in Set 1 and a 1,500 foot channel in Set 2 at approximately equal distances apart, beginning on east side of river.

TABLE 18.

SAMPLES FROM THE WABASH RIVER, TAKEN AT VARYING DEPTHS.

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli, Presumptive Test.		
Aug. 29.....	713	Mt. Carmel..........	1.0	.0002	.0400	.7610	.6960	12.8	140	2,240	+	3.0	100 feet below railroad bridge, 12 feet below surface.
Aug. 29.....	714	Mt. Carmel..........	1.2	.0002	.0400	.7040	.6440	11.2	140	2,870	+	3.0	8 feet below surface.
Aug. 29.....	715	Mt. Carmel..........	1.2	.0002	.0400	.6640	.6180	11.2	140	3,210	+	3.0	4 feet below surface.
Aug. 29.....	716	Mt. Carmel..........	1.6	.0001	.0400	.6820	.6970	11.0	127	3,840	+	3.0	At surface of water.
Aug. 30.....	725	Mt. Carmel..........	1.7	.0001	.0200	.9640	.6130	16.0	127	2,420	+	2.5	2,000 feet up White River, 12 feet below surface.
Aug. 30.....	726	Mt. Carmel..........	1.6	.0001	.0200	.9780	.6840	16.0	127	2,810	+	2.5	8 feet below surface.
Aug. 30.....	727	Mt. Carmel..........	1.5	.0001	.0200	.9800	.6900	16.0	127	3,120	+	2.5	4 feet below surface
Aug. 30.....	728	Mt. Carmel..........	1.2	.0001	.0200	.9910	.6870	16.6	127	3,000	+	2.5	At surface of water.

TABLE 19.

B. COLI POSITIVE TEST, WABASH RIVER SAMPLES.

Date.	Laboratory No.	Time.	Lactose Broth.	Agar Culture.	Gelatin Tube.	Growth.		Dextrose Broth.	Indol Reaction.	Nitrite Reduction.	Result.	Remarks.
						Lactose.	Dextrose.					
June 5	1	7 a. m.	—	+	+	+	+	—	+	+	+	Bluffton; end of island.
June 5	10	7 a. m.	—	+	+	+	+	+	+	+	+	Beneath C. P. & C. bridge.
June 5	12	7 a. m.	—	—	—	—	—	—	—	—	—	Bluffton city tap, W. D. Mason & Co.
June 6	13	11 a. m.	—	+	—	+	+	—	+	+	—	Huntington; beneath Salamonie bridge.
June 6	20	11 a. m.	—	+	—	+	+	—	+	+	+	Country Club; opposite tennis court.
June 6	21	11 a. m.	—	—	—	—	—	—	—	—	—	Public fountain; Jefferson and Matilda streets.
June 8	27	11 a. m.	—	+	+	+	+	—	+	+	+	Wabash; beneath Big Four bridge.
June 8	33	11 a. m.	+	+	—	+	+	+	+	+	+	Wabash; 300 yards below strawboard works.
June 8	34	11 a. m.	—	—	—	—	—	—	—	—	—	Wabash city tap; 156 West Market street.
June 8	36	2 p. m.	—	—	—	—	—	—	—	—	—	Peru city tap; Bearss Hotel.
June 8	38	2 p. m.	+	+	+	+	+	+	+	+	+	Peru; 1500 feet above C. & O. bridge.
June 8	47	2 p. m.	+	+	+	+	+	+	+	+	+	Peru; 100 feet below C. & O. shops.
June 15	49	5 p. m.	+	+	+	+	+	+	+	+	+	Logansport; 3 miles above water works.
June 15	57	5 p. m.	+	+	+	+	+	+	+	+	+	Logansport water works intake.
June 15	59	5 p. m.	+	+	—	+	+	—	+	+	+	Logansport tap; Wells-Fargo Express Co.
June 17	60	5 p. m.	—	+	+	—	—	—	—	—	—	Delphi tap; from Cavender's Livery.
June 17	69	5 p. m.	+	+	+	—	+	+	+	+	+	Tippecanoe River; 2 miles below mouth.
June 19	72	3 p. m.	+	+	—	+	+	+	+	+	+	Lafayette; opposite Soldiers' Home.
June 20	81	11 a. m.	—	—	—	—	—	—	—	—	—	Lafayette city tap; Leffler's Co.
June 20	85	11 a. m.	—	—	—	—	—	—	—	—	—	West Lafayette tap; Col. and Salisbury streets.
June 20	88	11 a. m.	—	—	—	—	—	—	—	—	—	Laundry tap at Soldiers' Home.
June 21	98	11 a. m.	+	+	+	—	+	+	—	+	+	Lafayette; two miles below Main street bridge.
June 24	99	11 a. m.	+	+	—	+	+	—	—	+	+	Opposite Soldiers' Home pumping station.
June 26	116	11 a. m.	—	+	+	+	+	+	—	+	+	Opposite Soldiers' Home.
June 28	148	2 p. m.	+	+	—	+	+	+	—	+	+	Lafayette; 25 miles below.
June 29	152	7 a. m.	+	+	+	+	+	+	—	+	+	One mile below Attica; one mile below No. 151.
June 29	155	10 a. m.	—	—	—	—	—	—	—	—	—	Attica water tap; West and Jackson streets.
July 1	157	11 a. m.	—	—	—	—	—	—	—	—	—	Williamsport old pump house.
July 1	162	11 a. m.	+	+	—	+	+	+	—	+	+	One mile below Attica; one mile below No. 151
July 2	177	3 p. m.	+	—	+	+	+	+	—	+	+	Beneath covered bridge, Covington.
July 5	181	9 a. m.	—	—	—	—	—	—	—	—	—	City tap; Covington pumping station.
July 5	187	9 a. m.	+	+	+	+	+	+	—	+	+	Two miles below Big Four R. R. bridge.
July 12	222	9 a. m.	+	+	+	+	+	+	—	+	+	Beneath bridge at Perrysville.
July 13	247	8 a. m.	+	+	+	+	+	+	—	+	+	Two miles above Montezuma.

July 13	257	8 a. m.	+	+	+	+	+	+	—	+	+	Three miles below Montezuma.
July 14	268	9 a. m.	+	+	+	+	+	+	—	+	+	Three miles below Montezuma.
July 24	318	10 a. m.	+	+	+	+	+	+	—	+	+	Seven miles below Montezuma.
July 24	323	10 a. m.	+	+	+	+	+	+	+	+	+	One mile below Clinton.
July 29	361	5 p. m.	+	+	+	+	+	+	+	+	+	Two miles above Terre Haute.
July 29	374	8 p. m.	+	+	+	+	+	+	+	+	+	Two miles below Terre Haute.
Aug. 12	554	3 p. m.	+	+	+	+	+	+	+	+	+	One mile below Riverton, Ind.
Aug. 12	573	3 p. m.	+	+	+	+	+	+	+	+	+	Twenty miles below Riverton, Ind.
Aug. 13	591	1 p. m.	+	+	+	+	+	+	+	+	+	One mile above Vincennes, Ind.
Aug. 16	617	10 a. m.	—	—	—	—	—	—	—	—	—	Vincennes city tap; Grand Hotel.
Aug. 21	671	2 p. m.	+	+	+	+	+	+	+	+	+	One mile above Mt. Carmel.
Aug. 23	672	2 p. m.	+	+	+	+	+	+	+	+	+	Two thousand feet up White River.
Aug. 23	678	2 p. m.	+	+	+	+	+	+	+	+	+	One mile below railroad bridge, Mt. Carmel.
Sept. 6	756	2 p. m.	+	+	+	+	+	+	+	+	+	One mile above Grayville, Ill.
Sept. 6	758	2 p. m.	+	+	+	+	+	+	+	+	+	One mile below Grayville, Ill.
Sept. 8	773	1 p. m.	+	+	+	+	+	+	+	+	+	One-half mile below New Harmony, Ind.

TABLE 20.

SAMPLES FROM SEWERS EMPTYING INTO WABASH RIVER

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		Solids.		Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per CC.	Coli, Presumptive Test.	Total.	Fixed.	
June 4	4	Bluffton........	12.0	.0010	.0000	.0403	.6973	36.4	Slt.....	600,000	+	....	....	Market street sewer effluent.
June 25	115	Lafayette.......	7.2	.0000	.1000	.7711	.8600	18.8	Slt.....	4,200	+	104.4	74.0	Sewer below brewery.
June 27	126	Lafayette.......	2.6	.0001	.0000	.0000	2.1756	37.6	Dec....	450,000	+	....	....	West Lafayette upper sewer effluent.
June 27	127	Lafayette.......	5.4	.0090	.0200	.0000	2.3788	37.2	Dec....	522,000	+	....	....	Sewer effluent 200 feet above bridge.
June 27	128	Lafayette.......	17.2	.0080	.0800	.5857	2.2192	28.8	Dec....	340,000	+	....	....	Sewer effluent, Ferry street.
June 27	129	Lafayette.......	5.8	.0060	.0100	.6692	1.1692	28.8	Dec....	370,000	+	....	....	Sewer effluent; Columbia street.
June 27	130	Lafayette.......	10.8	.0003	.0000	.0000	2.2028	38.0	Dec....	680,000	+	....	....	Sewer effluent above strawboard works.
June 27	131	Lafayette.......	12.2	.0002	.0000	.0000	8.5250	32.4	Dec....	250,000	+	....	....	Sewer effluent, West Lafayette Main street.
Aug. 2	466	Terre Haute....	32.0	.0040	.1500	.5740	19.2460	32.0	70	300,000	+	189.0	145.0	Sewer effluent; Eagle street sewer.
Aug. 2	467	Terre Haute....	8.0	.0003	.0200	.5160	4.0804	24.6	70	275,000	+	92.0	62.0	Sewer effluent; Ohio street sewer.
Aug. 2	468	Terre Haute....	20.0	.0005	.0040	.4990	9.0500	32.0	70	262,000	+	....	....	Sewer effluent; Hulman street sewer.
Aug. 15	603	Vincennes......	60.0	.0200	.0500	.4620	10.5000	24.0	60	660,000	+	88.4	66.2	Sewer effluent; Hichman street sewer.
Aug. 16	609	Vincennes......	13.0	.0020	Trace..	.6110	5.0000	40.4	None..	1,300,000	+	91.4	63.4	Sewer effluent; Perry street sewer.
Aug. 30	729	Mt. Carmel.....	3.1	.0005	.0500	.8080	1.4280	20.0	65	228,000	+	62.6	44.6	Sewer effluent from Big ditch.

TABLE 21.

SAMPLES FROM CITIES AND TOWNS ALONG WABASH RIVER.

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per CC.	Coli, Presumptive Test.	
June 5	11	Bluffton	8.6	.0000	.0000	.8591	.1010	35.2	None	100	—	Bluffton tap; W. D. Mason & Co.
June 5	12	Bluffton	8.4	.0000	.0000	.8903	.1465	35.2	None	183	—	Bluffton tap; Bliss Hotel.
June 6	21	Huntington	3.8	.0000	.0000	.3256	.0646	32.6	None	13	—	Huntington public tap; Jefferson and Matilda streets.
June 6	22	Huntington	4.0	.0000	.0000	.3951	.0828	33.2	None	7	—	Huntington public tap; Jefferson and Market streets.
June 8	34	Wabash	1.2	Trace	.0000	.9687	.0737	32.4	None	1,260	—	Wabash tap; 156 West Market street.
June 8	35	Wabash	1.2	Trace	.0000	.9019	.0646	32.4	None	23	—	Wabash tap; Interurban Cafe.
June 8	36	Peru	3.7	Trace	.0800	.9104	.0737	29.2	None	625	—	Bearss Hotel tap, Peru, Ind.
June 8	37	Peru	3.8	Trace	.0800	.9600	.0919	29.6	None	37	—	Ward's livery barn; Peru city tap.
June 15	57	Logansport	1.4	.0001	.0500	.8548	.4010	24.0	Slt	1,250	+	Logansport water works intake.
June 15	58	Logansport	1.0	.0000	.0500	.6779	.3364	24.0	Slt	162	—	City tap; 595 Michigan avenue.
June 15	59	Logansport	1.0	.0000	.0500	.8035	.3737	24.0	Slt	1,000	+	City tap; Wells-Fargo Express Co.
June 17	60	Delphi	1.4	.0000	.1200	.8200	.0000	28.0	None	39	—	City tap, Delphi; Cavender's livery barn.
June 17	61	Delphi	1.4	.0000	.1000	.8982	.0000	28.4	None	23	—	City tap; W. J. Atkins' residence.
June 20	80	Lafayette	4.6	.0006	.5000	.8815	.3000	22.0	None	370	—	Columbia Park reservoir; water works tap.
June 20	81	Lafayette	4.6	Trace	.3000	.4515	.0900	27.6	None	180	—	Lafayette tap; Leffler's Co.
June 20	82	Lafayette	4.4	.0000	.3000	.3430	.1100	27.2	None	32	—	Lafayette tap; Johnson's drug store.
June 20	83	Lafayette	4.4	Trace	.3000	.4016	.1100	27.2	None	37	—	Lafayette pumping station tap.
June 20	84	West Lafayette	1.2	.0000	.0800	.6108	.0200	27.2	None	11	—	West Lafayette pumping station tap.
June 20	85	West Lafayette	1.2	.0000	.0800	.2510	.0300	26.8	None	11	—	West Lafayette tap; College and Salisburg streets.
June 20	86	West Lafayette	1.2	.0000	.0800	.4491	.0300	26.8	None	4	—	West Lafayette tap; 116 Fowler avenue.
June 20	87	West Lafayette	.8	.0000	.0000	.8225	.0300	27.6	None	4	—	Soldiers' Home tap at pumping station.
June 20	88	West Lafayette	.8	Trace	.0000	.3012	.0300	27.2	None	24	—	Soldiers' Home tap at laundry.
June 29	153	Attica	1.7	.0001	.5000	.5757	.1570	27.6	None	58	—	City tap, Attica, at pumping station.
June 29	154	Attica	1.6	.0001	.5000	.5756	.2740	27.5	None	60	—	City tap at Jacobson grocery store.
June 29	155	Attica	1.7	.0001	.5000	.5745	.2450	27.6	None	65	—	City tap at Larden residence, West Jackson street.
July 1	156	Williamsport	1.6	.0001	.0000	.5336	.9800	32.8	Slt	28	—	Williamsport new pump house.
July 1	157	Williamsport	1.5	.0001	.0000	.3707	.1470	32.9	Slt	24	—	Williamsport old pump house.
July 1	158	Williamsport	1.6	.0001	.0000	.2668	.1750	32.7	Slt	41	—	Williamsport; Star Restaurant tap.
July 5	181	Covington	2.6	.0001	.7500	.7792	.0752	28.4	Slt	1	—	Covington city tap at pumping station.
July 5	182	Covington	2.6	.0001	.9000	.8012	.3002	28.8	Slt	3	—	City tap at water company's office.
July 5	183	Covington	2.7	.0001	.9000	.7616	.4042	28.4	Slt	2	—	City tap at South End Bakery.
July 22	320	Clinton	2.8	.0001	.6000	.8460	.1174	27.8	Dec	10	—	Clinton city tap at pumping station.
July 22	321	Clinton	2.8	.0001	.6500	.7960	.1070	27.8	Dec	10	—	City tap at White's drug store.
July 22	322	Clinton	2.6	.0001	.6500	.8642	.1170	27.8	Dec	10	—	Public Fountain tap; corner Main street.

TABLE 21.

SAMPLES FROM CITIES AND TOWNS ALONG WABASH RIVER.

(Continued|)

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per CC.	Coli, Presumptive Test.	
July 24	338	Terre Haute....	1.4	.0000	.2000	.7750	.4420	12.4	None..	60	—	Terre Haute city tap at fountain on Wabash and Fourth.
July 24	339	Terre Haute...	1.4	.0000	.2000	.8040	.3710	11.0	None..	60	—	City tap at Chicago Packing House.
July 24	340	Terre Haute....	1.2	.0000	.2000	.7360	.3810	10.0	None..	74	—	City tap; Smith Garage.
July 24	341	Terre Haute....	3.2	.0000	.3200	.5360	.1666	28.8	None..	60	—	City pump; North Fourth street.
July 24	342	Terre Haute....	1.6	.0000	.0000	.3830	.2205	27.8	None..	10	—	City pump at City Hall.
July 24	343	Terre Haute....	25.2	.0001	.2400	.7540	.1390	26.8	None..	62	—	City pump at Wabash and Eighth streets.
July 24	344	Terre Haute....	1.2	.0000	.2000	.5080	.2921	11.6	None..	38	—	City tap at Terre Haute pumping station.
Aug. 3	471	Terre Haute....	10.1	.0001	2.5000	.8460	.3270	30.4	None..	22	—	Terre Haute; pump at Cassaday's drug store.
Aug. 3	472	Terre Haute....	10.6	.0001	1 3000	.8220	.4100	26.2	None..	27	+	Terre Haute; well at Bank saloon.
Aug. 3	473	Terre Haute...	8.3	.0001	.1000	.7980	.3860	26.0	None..	42	+	Terre Haute; well at Baylor's saloon.
Aug. 3	474	Terre Haute....	6.4	.0002	1.0000	.8470	.5120	26.8	None..	32	+	Driven well at residence, Ohio and First streets.
Aug. 3	475	Terre Haute....	3.6	.0002	.0000	.8120	.4760	27.6	None..	77	—	Driven well at Fourteenth and Wabash avenue.
Aug. 3	476	Terre Haute...	16.0	.0001	.8000	.8000	.3880	24.8	None..	62	+	Driven well at Spruce and Eighth streets.
Aug. 3	477	Terre Haute....	11.5	.0002	2.5000	.7650	.3760	13.7	None..	34	—	Driven well at Green's store.
Aug. 3	478	Terre Haute....	16.0	.0001	2.5000	.8220	.3320	21.2	None..	21	+	Driven well at Fourth and Elm streets.
Aug. 10	552	Riverton.......	1.0	.0000	.3000	.7280	.0577	21.6	None..	19	—	Riverton town pump.
Aug. 10	553	Riverton.......	1.2	.0000	.3000	.7090	.0577	20.8	None..	46	—	Riverton town pump.
Aug. 16	615	Vincennes......	2.8	.0000	.0200	7030	.3500	16.4	None..	235	—	Vincennes city tap; Second and Broadway.
Aug. 16	616	Vincennes......	2.7	.0000	.0200	.7280	.3000	16.6	None..	175	—	Vincennes city tap; Grand Hotel.
Aug. 16	617	Vincennes......	3.0	.0000	.0200	.7110	.4620	16.2	None..	70	—	New Harmony; old Rapp well.
Sept. 9	774	New Harmony..	6.6	.0002	2.0000	.6280	.5010	26.6	None..	22,200	+	Town pump opposite Bennett's grocery.
Sept. 9	775	New Harmony..	6.2	.0001	2.0000	.6300	.3680	23.4	None..	22	+	Town pump opposite American Express office.
Sept. 9	776	New Harmony..	7.6	.0001	2.0500	.6640	.4120	25.2	None..	338	+	Driven well at librarian's residence.
Sept. 9	777	New Harmony..	6.6	.0001	.0800	.5170	.5180	29.6	None..	29	—	Town pump opposite depot.
Sept. 9	778	New Harmony..	1.6	.0001	.0300	.7120	.3620	23.8	None..	28	—	Driven well at school house.
Sept. 9	779	New Harmony..	6.0	.0002	2 5000	.7760	.6820	28.2	None..	683	—	New driven well at school house.

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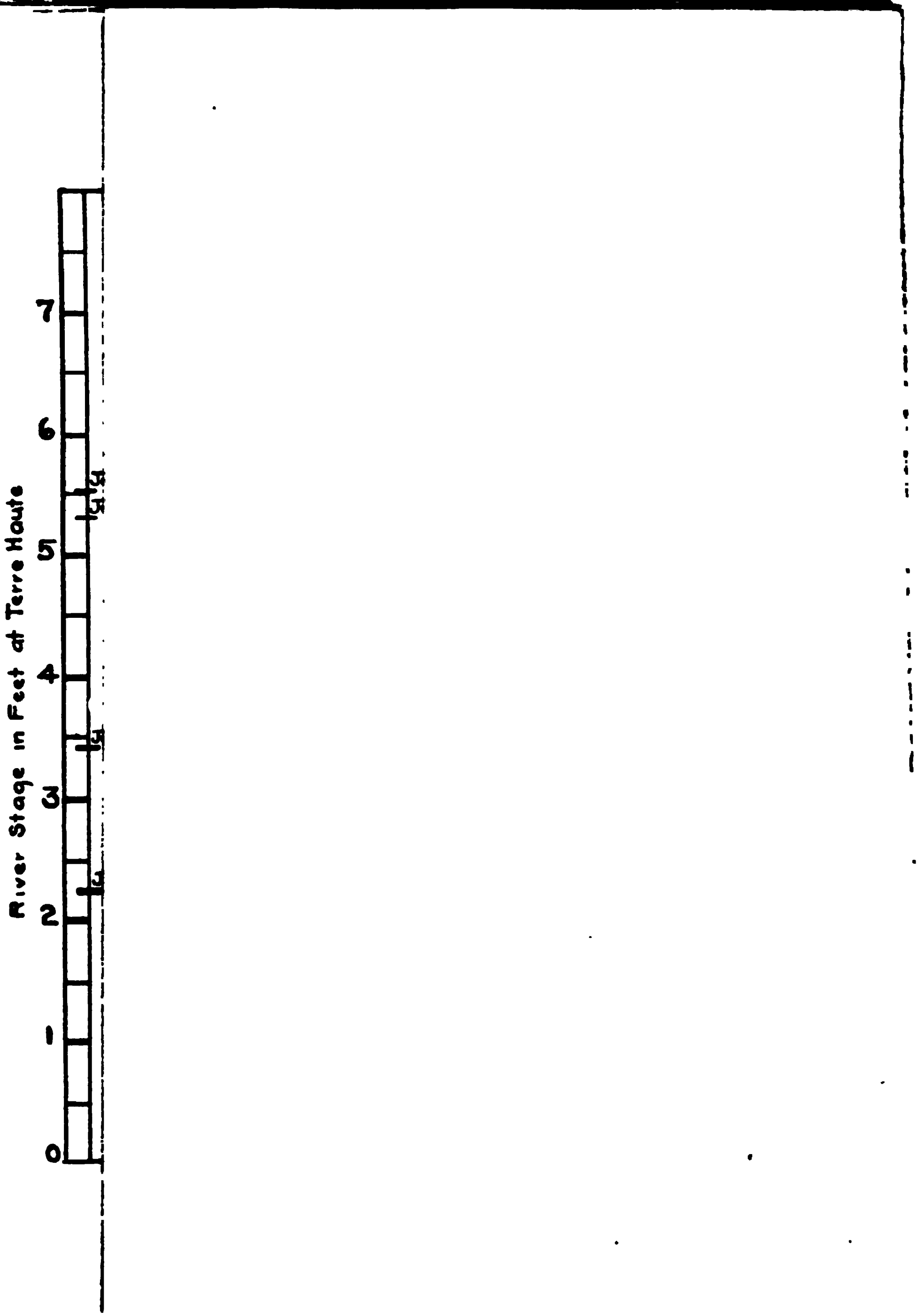
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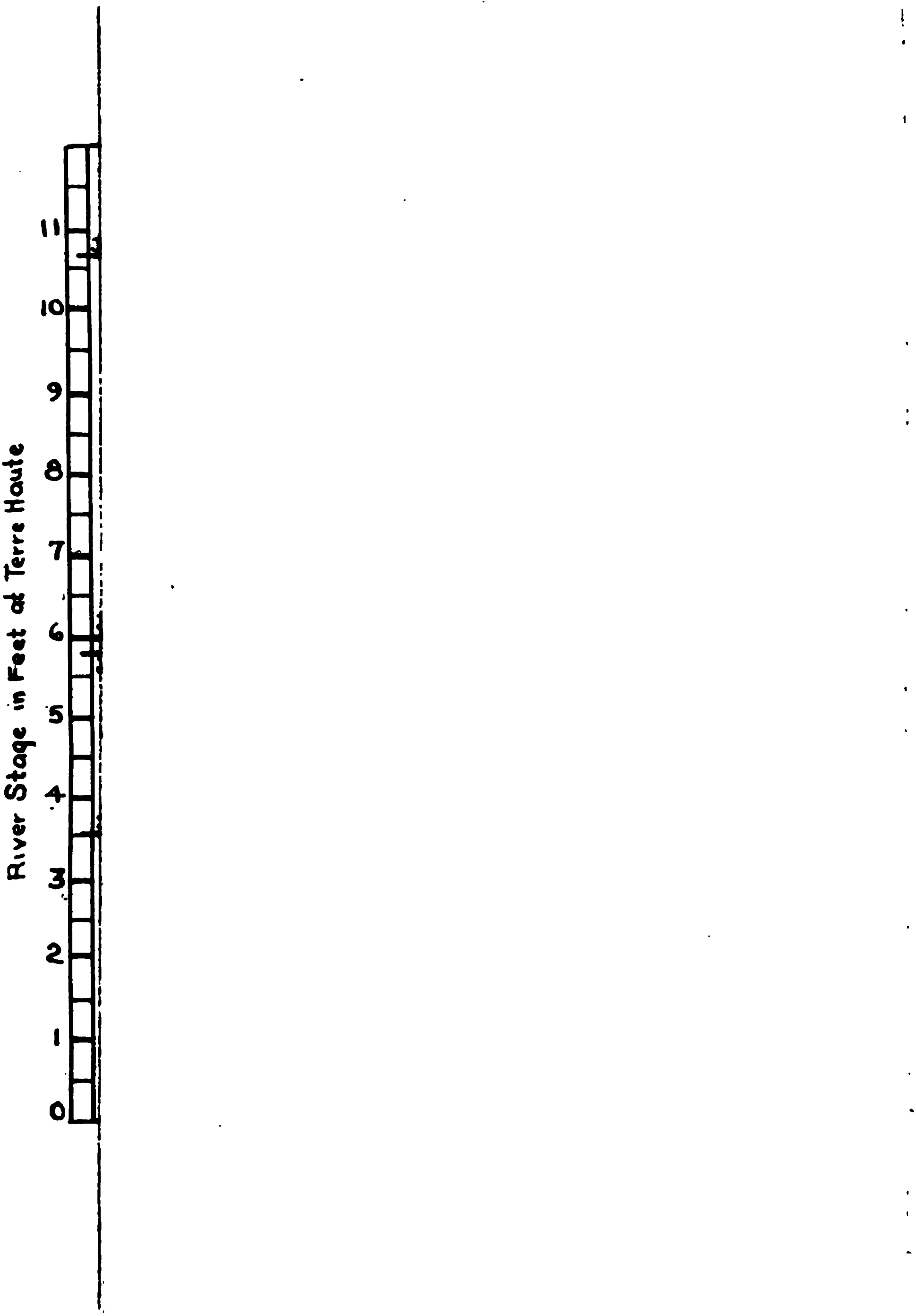
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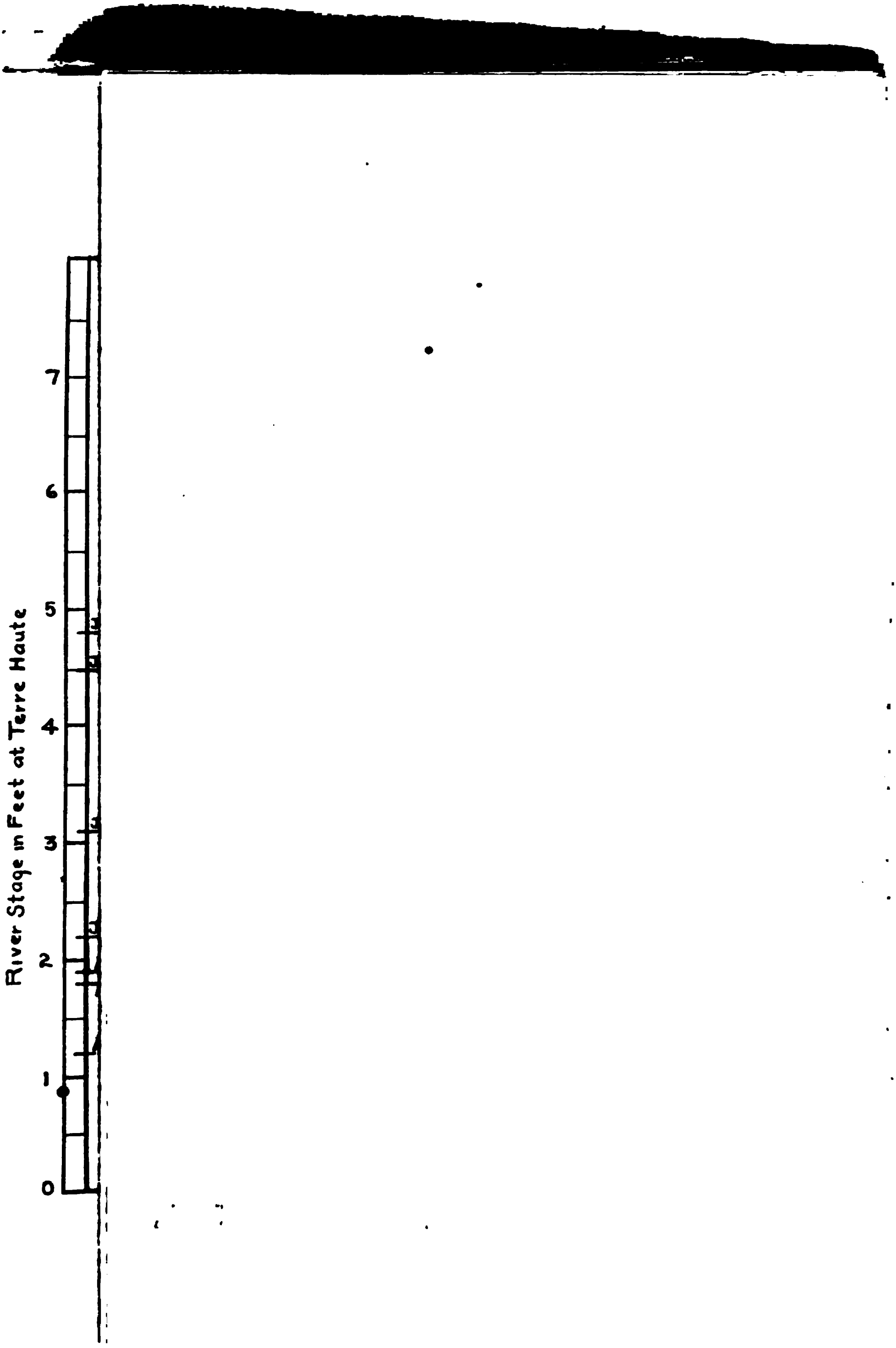
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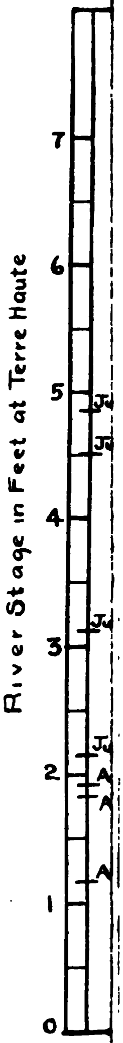
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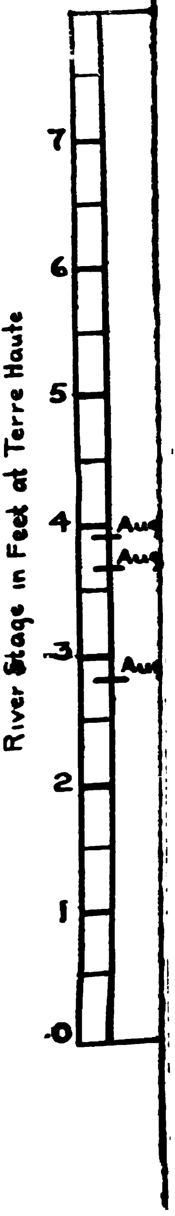
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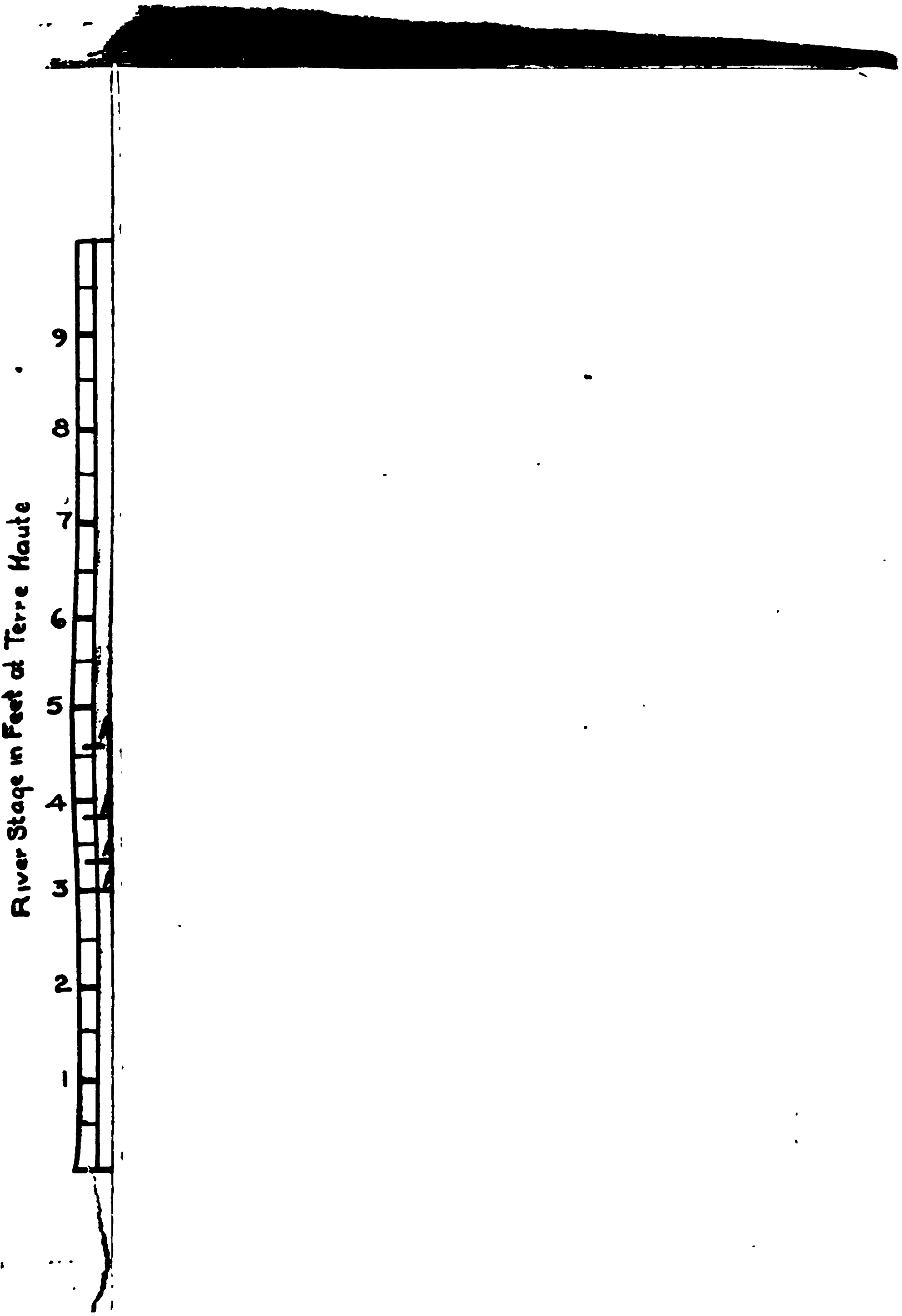
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SAMPLES FROM WABASH [illegible].

Date.	Laboratory No.	Sampling Point.	Chemical.							Bacterial.		River Stage Terre Haute.	Remarks.
			Chlorine.	Nitrites.	Nitrates.	Oxygen Dissolved.	Oxygen Consumed.	Alkalinity.	Turbidity.	Bacteria Per cc.	Coli. Presumtive Test.		
June 6.....	19	Huntington..........	2.6	.0006	.1000	.7016	.6466	26.0	Slight.	4,900	−	2.50	Little River; 200 feet above mouth.
June 6.....	23	Huntington..........	2.4	.0002	.0000	.6263	.6926	25.2	Slight.	44,500	+	2.50	½ mile above mouth.
June 6.....	24	Huntington..........	2.2	.0001	.0000	.8518	.6558	25.4	Slight.	100	+	2.50	1¾ miles above mouth.
June 15.....	55	Logansport..........	1.4	Trace.	Trace.	.8305	.2647	24.4	Slight.	1,310	+	1.58	Eel River; race intake, above dam.
June 15.....	56	Logansport..........	1.0	.0004	.0500	.8537	.5421	24.4	Slight.	36,400	+	1.58	Horney Creek; under Mich. Ave. bridge.
June 17.....	66	Americus............	1.4	.0001	.0000	.6945	.5383	14.4	Dec.	138	+	2.17	Tippecanoe River, 500 feet above mouth.
July 2.....	166	Attica..............	1.6	.0001	.0900	.7792	.2606	14.2	Slight.	7,400	+	1.60	Pine Creek, 200 feet above mouth.
July 2.....	168	Attica..............	1.8	.0003	.0800	.8202	.5880	23.4	Slight.	231,000	−	1.60	Fall Creek, 200 feet from mouth.
July 11.....	229	Covington...........	1.2	.0001	.0800	.7092	.9048	21.6	Dec.	98,000	+	2.80	Vermillion River, 500 feet from mouth.
July 12.....	239	Newport.............	1.0	.0001	.0600	.7453	.9120	20.4	Dec.	75,000	+	2.00	Little Vermillion River; 1,000 feet from mouth.
July 12.....	242	Newport.............	1.0	.0001	.0500	.8440	1.2200	22.8	Dec.	89,000	+	2.00	Sugar Creek; 800 feet from mouth.
July 17.....	274	Montezuma..........	.9	.0002	.1000	.8480	.5880	22.4	Dec.	1,300	+	6.50	Raccoon Creek; 500 feet from mouth.
July 20.....	307	Montezuma..........	.8	.0001	.0000	.8900	.3920	24.2	Dec.	2,860	+	5.80	Raccoon Creek; 500 feet from mouth.
July 22.....	316	Montezuma..........	1.2	.0001	.1000	.6960	3.0860	15.2	Dec.	4,240	+	6.20	Browilleta Creek; 500 feet from mouth.
July 23.....	327	Clinton.............	.8	.0001	.0000	.7600	.3610	21.8	Dec.	22,000	+	6.00	Brown Creek; 500 feet from mouth.
July 23.....	330	Clinton.............	.8	.0001	.0000	.8470	1.3310	9.2	Dec.	13,000	+	6.00	Small Creek; 200 feet from mouth.
July 23.....	333	Clinton.............	.6	.0001	.0400	.6690	.6070	12.0	Dec.	21,000	+	6.00	Creek; 200 feet from mouth.
July 23.....	335	Clinton.............	.6	.0001	.0600	.5340	.7650	12.0	Dec.	14,200	+	6.00	Lost Creek; 200 feet from mouth.
Aug. 5.....	494	Terre Haute.........	2.2	.0001	.0000	.8370	.8010	23.2	40	20,000	+	1.20	Sugar Creek; 200 feet above mouth.
Aug. 6.....	500	Terre Haute.........	3.0	.0001	.0100	.7010	.7160	22.0	30	47,000	+	1.1	Clear Creek; 200 feet above mouth.
Aug. 7.....	523	Merom...............	3.2	.0001	.0200	.9600	.4120	20.0	30	11,600	+	.9	Creek; 200 feet above mouth.
Aug. 7.....	530	Merom...............	28.4	.0001	.0200	.6460	.5780	13.2	30	6,800	+	.9	Creek; 200 feet above mouth.
Aug. 8.....	536	Merom...............	2.8	.0001	.0100	.8420	.9120	21.2	35	4,700	+	1.0	Creek; 200 feet above mouth.
Aug. 8.....	549	Merom...............	2.8	.0001	.0100	.9400	1.0400	20.8	35	27,200	+	1.0	Turmans Creek; 200 feet above mouth.
Aug. 8.....	551	Merom...............	1.6	.0001	.0200	.9000	1.4200	16.0	35	34,000	+	1.0	Turtle Creek; 200 feet above mouth.
Aug. 13.....	576	Riverton............	.6	.0002	.0200	.9050	.4800	16.8	30	500	+	1.8	Creek; 200 feet from mouth.
Aug. 13.....	585	Riverton............	2.8	.0001	.0050	.8880	.4990	17.6	70	6,000	+	1.8	Creek; 150 feet from mouth.
Aug. 15.....	601	Vincennes...........	1.7	.0001	Trace.	.9620	.7500	18.0	100	17,000	+	3.9	Kelso Creek; 400 feet above mouth.
Aug. 15.....	602	Vincennes...........	35.0	.0002	.0500	.7530	.8250	24.0	50	1,650,000	+	3.9	Big Ditch; 150 feet above mouth.
Aug. 20.....	643	Vincennes...........	14.4	.0001	Trace.	.5530	.4430	17.6	138	3,870	+	2.5	Embarras River; 200 feet above mouth.
Aug. 23.....	672	Mt. Carmel..........	1.4	.0001	.0200	.7120	.6500	13.6	250	2,200	+	8.1	White River; 2,000 feet above mouth.
Aug. 24.....	679	Mt. Carmel..........	3.5	Trace.	Trace.	.7040	.8160	5.4	200	33,200	+	8.1	Patoka River; 2,000 feet from mouth.
Aug. 27.....	697	Mt. Carmel..........	.8	.0002	Trace.	.7260	.7270	13.0	175	3,240	+	3.8	White River; 2,000 feet from mouth.
Aug. 28.....	705	Mt. Carmel..........	1.0	.0001	.0200	.8140	.7270	13.6	160	3,680	+	3.3	White River; 2,000 feet from mouth.
Aug. 29.....	717	Mt. Carmel..........	1.0	.0001	.0400	.7210	.7470	13.0	127	3,120	+	3.0	White River; 2,000 feet from mouth.
Sept. 6.....	766	New Harmony.......	.8	Trace.	Trace.	.6510	.3770	24.8	30	4,800	+	1.3	Black Creek; 400 feet from mouth.
Sept. 10.....	781	New Harmony.......	1.0	.0001	Trace.	.6870	.3860	20.0	30	16,200	+	.9	Rush Creek; 200 feet above mouth.
Sept. 10.....	785	New Harmony.......	2.0	Trace.	.0001	.7020	.6860	20.4	30	12,260	+	.9	Fox Creek; 200 feet above mouth.
Sept. 10.....	809	New Harmony.......	1.0	Trace.	.0001	.6870	.3860	8.4	30	19,000	+	.9	Little Wabash River; 200 feet above mouth.

GENERAL CONCLUSIONS.

This survey has shown the importance of the Wabash River as a source of water supply for the cities and manufacturing establishments along its banks. Its value as a means for disposing of the sewage and manufacturing wastes is also seen.

CONCLUSIONS.

This investigation has shown that cities using ground water supplies, namely Bluffton, Huntington, Wabash, Peru, Lafayette and Covington, especially the larger cities, have at times experienced difficulty in obtaining sufficient water. Some time in the future when additional water is needed the Wabash River will be turned to as the only available supply. Several cities in Indiana, among them being Indianapolis and Muncie, some time ago reached the point where it was necessary to draw on a surface supply to supplement the original ground water supply.

Although from a physical standpoint, the river was found to be in good condition on this survey, the analyses showed that it was unfit in its raw state for drinking and domestic purposes, and that it would be necessary to filter the water to make it potable. The extra burden imposed upon a filtration plant by using the river for the disposal of sewage and manufacturing wastes in constantly increasing quantities, should be lessened as much as possible. One city was found where river water, although not drawn from the Wabash, was used without treatment. The danger of this practice was shown by the typhoid fever epidemic in the spring of 1911 in that city.

Similar results were found to exist in the Ohio River. The analytical data showed that the water was not fit for human consumption in its raw state, yet a few cities were found using it in this manner.

The inhabitants of Indiana are safeguarded in the use of their drinking water by recent legislation by which the people can call upon the State Board of Health to remedy the situation where the water supplies are bad. It is thus assured that the use of river water in the untreated state will not be permitted in Indiana cities.

The practice of the large manufacturing establishments, especially the straw-board works on the Wabash River, of pumping all wastes into the river, is one that should be stopped. Some other means must be found for the disposal of manufacturing wastes, especially when the quantities are so large that their existence in the river can be traced for several miles below the point of discharge. The harmful effects of the discharge of manufacturing wastes was noticed at Wabash, Ind., where a large straw-board works is located. From Bluffton to Wabash, where the survey was made in a rowboat, fish life was abundant. Many fish were seen jumping out of the water, and several good-sized fish landed in the boat. The water between these two points was also very clear. After the sewer of the straw-board works was passed, the lack of animal life in the water was as marked as its presence above this point.

For a satisfactory disposal of sewage by dilution the Sanitary District of Chicago requires a flow of 3.3 cubic feet per second for every one thousand people sewering into the Chicago Drainage Canal. Reference is made to the tables and testimony in the report on the Ohio River Survey.

Taking the above figure of 3.3 cubic feet per second flow, with the minimum flow of a five-year period of 1,020 cubic feet per second, the sewage from a population of 309,000 could be discharged. The urban population above and including Lafayette, is 83,000, and the total population on the watershed above Lafayette is not over 175,000; the danger of a nuisance being created is far removed.

A minimum flow of 1,920 cubic feet per second is recorded at Terre Haute from gaugings covering a years' period. This would safely care for the sewage from a population of 582,000. With an urban population of 167,000 at and above Terre Haute, and a total estimated population of 350,000 on the watershed above Terre Haute, the river will be in a good sanitary condition for years to come.

It is seen from the above figures and from the dissolved oxygen present, as given in Table 15, that from a physical standpoint the river water is in good condition at present and will be for years to come. Its suitability for water supplies is of more importance, and it is to be considered from this standpoint.

Some degree of purification of all manufacturing wastes and domestic sewage should be required. Partial purification such as screening or passing the sewage and wastes through Imhoff tanks will accomplish the desired results for some time to come. This is advisable in order to keep the river in as good a condition as at the present time. Such treatment as suggested would improve its present condition and would protect the river from further serious contamination in the future.

RECOMMENDATIONS.

It is recommended that all new sewerage systems or future extensions to present systems be designed to convey all domestic sewage and manufacturing wastes to one outlet.

It is recommended that provision be made for a disposal plant in all sewerage system designs.

It is recommended that coagulation and filtration, with provision for a hypochlorite of lime treatment, be required for all public water supplies using the Wabash River as the source.

It is recommended that the co-operation of all cities and towns be sought in furthering the protection of the river from pollution by domestic and manufacturing wastes.

APPENDIX.

CITIES AND TOWNS.

BLUFFTON.

Bluffton, Wells County, has a population of 5,037, and is the first city or town of importance on the Wabash River in Indiana.

Public improvements include a municipal lighting and water plant, a sewerage system and one mile of paved streets.

Water Works.

The water supply is taken from three six-inch wells, 500 feet in depth. Air lifts are used to force the water into two reservoirs, both about 20 feet in depth. The larger one has a capacity of 346,000 gallons and the smaller, 145,000 gallons.

From the wells the supply is introduced into the mains by one horizontal duplex tandem compound McGowan pump of 3,000,000 gallons capacity and one horizontal duplex simple Holly pump of 1,000,000 gallons capacity. The direct pressure system is used.

About one-half the population, or 2,500 people, depend upon the city supply, and the average daily pumpage is about 500,000 gallons. The three miles of mains in use reach all portions of the city.

The water, although extremely hard, is of good quality. At different periods trouble has been experienced when the river has risen suddenly and river water has been forced into the reservoir. The bottom of the reservoir and the river bed seem to lie on the same strata of rock, and when the elevation of the river water is higher than that in the reservoir, water is forced into the reservoir. This has occurred several times, but no sickness or ill consequence other than the high turbidity produced in the water has occurred.

Sewerage.

The sewer system comprises about 10.2 miles of combined sewers with four outlets into the Wabash River. About 2,000 people use the sewers.

Garbage and Night Soil.

Most of the garbage is collected by one man who sorts it over, cooks it and uses it for feeding hogs. A few others do the same, but on a much smaller scale.

All the night soil is hauled outside the city limits and buried, or used as a fertilizer by the farmers.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

In 1908 and 1909 there were no deaths from typhoid fever, but the three following years the rate was 114.3, 22.9 and 59.5 per 100,000. For a city with a well supply, these figures are unusually high.

MARKLE.

Markle, Huntington County, is about twelve miles below Bluffton. It has a population of 820.

Water.

The people depend upon private wells, most of them being drilled.

Sewerage.

There are no sewers in town.

Garbage and Night Soil.

Each family takes care of its own night soil and garbage.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid.

There was one case of typhoid and no deaths in 1912.

HUNTINGTON.

Huntington, Huntington County, is about eighteen miles below Markle and two miles back from the Wabash River. Little River flows through the city and carries the sewage to the Wabash, emptying into the latter about two miles below the main waterworks pumping station. It has a population of 10,350. Civic improvements include a municipal water and electric light plant, a municipal garbage incinerator and 12.9 miles of paved and 4.7 miles of improved streets.

Water Works.

The water supply is drawn from deep wells. There are two pumping stations. The main station is located on the Wabash River about two miles from the city and the sub-station on Little River just above the city. The sub-station is used only when the demand is heavy and cannot be supplied by the main station.

At the main station there are 29 wells—12 six-inch and 17 eight-inch, 27 of them averaging 120 feet in depth, one 500 feet and one 330 feet deep. In seven of the wells the water is raised to a suction well by air lift, and the remaining twenty-two and this suction well are connected directly to the high-pressure pumps. The direct system is used, and a horizontal compound Gordon pump of 1,500,000 gallons capacity and a horizontal compound Worthington pump of 2,500,000 gallons capacity are in service.

At the sub-station there are seven wells. Three of these are six-inch, from 300 to 500 feet in depth, and four are six-inch wells from 200 to 300 feet in depth. Only the last four are in service at present. An electric-driven DeLaval centrifugal pump of 500,000 gallons capacity is connected to the wells.

The average daily pumpage is about 1,200,000 gallons, which is supplied to about 8,000 consumers through twenty-eight miles of mains. For the greater part of the year, the water is of satisfactory quality, but at times a woody odor and taste develops which is very disagreeable.

Sewerage.

The laying of sewers and other excavation work is difficult because of the stone underlying the city. It is near the surface everywhere and outcrops in a great many places.

There are 164 miles of combined sewers with eight outlets into Little River. It is estimated that 7,000 of the population are using the sewers.

Garbage and Night Soil.

All the garbage and ashes are collected under the direction of the city street department. The garbage is hauled to the municipal incinerator and burned. The average daily collection of garbage and ashes amounts to about eight tons. The total cost of collection and incineration for 1911 was $2,979.70, or an average of $1.20 per ton. The plant is giving good satisfaction, and although located near residences, is inoffensive. The night soil is collected by licensed men, who haul it outside the city, where it is buried.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

The death rate from typhoid fever has been low for the last four years. Five years ago, in 1908, it was 54.3, for the two following years, it was 20.1 and for the next two years it was less than ten per 100,000.

ANDREWS.

Andrews, Huntington County, is seven miles below Huntington and about one mile from the river. It has a population of 957. Civic improvements include paved streets and a private electric light plant.

Water.

Private wells are depended upon for the water supply.

Sewerage.

There are no sewers in town.

Garbage and Night Soil.

Most of the garbage is fed. Each spring there is a general clean-up and all rubbish is taken out of town. Once a year the night soil is collected and taken out of town and buried.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

There were eight cases and no deaths from typhoid fever in 1912.

LAGRO.

Lagro, Wabash County, is eight miles below Andrews It has a population of 463.

Water.

Private wells are depended upon for the water supply.

Sewerage.

There are no sewers in town.

Garbage and Night Soil.

Garbage and night soil is taken care of by each household.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

There were no cases in town in 1912.

WABASH.

Wabash, Wabash County, is located seven miles below Lagro It has a population of 8,693.

The water, electric light and gas plants are privately owned. Wabash has an extensive sewer system and fifteen miles of improved streets, eight miles of which are paved.

Water Works.

The water plant has thirteen 6-inch and 8-inch artesian wells, varying from 45 to 278 feet in depth, as the source of supply. These wells tap two different gravel stratas with a 19-foot hard clay strata between them. There is no connection between the two beds, as the water from the deepest bed is under a static head of about twenty feet, while that from the shallow bed is only under a six-foot head.

The water from the wells flows by gravity in a 12-inch main to a reservoir at the pumping station about a mile away, the difference in elevation between the two points is about 65 feet. The reservoir is under ground and has a diameter of 50 feet and a depth of 35 feet, with a capacity of 265,000 gallons. The depth of water in it is usually 18 feet.

At the well site another reservoir 100 feet in diameter, 14 feet deep, with a capacity of 824,670 gallons, is held in reserve, and is used only when necessary. The supply is gradually being overtaxed and although it has held out during the last two years when the demand has been heavy, a water famine is feared and the problem of getting additional water is being given serious thought.

The direct-indirect system is in use, the water being pumped from the reservoir at the station by a Hooven-Owens-Reutsehler belt-driven power pump of 1,000,000 gallons capacity, to a standpipe 25 feet in diameter and 100 feet high, with a capacity of

368,100 gallons. Two horizontal duplex compound Holly pumps of 1,500,000 gallons each are held in reserve for fire purposes.

The average daily consumption is 900,000 gallons, which is supplied to about 5,000 people by 32 miles of mains.

The water has always been of a very satisfactory quality.

Sewerage.

The sewers have been constructed on the separate and combined system. There are 13.8 miles of sanitary, eight miles of storm sewers, and two miles of combined sewers with three outlets into the Wabash River and three into Charlie Creek. About half the sewers are all or partially in rock.

It is estimated that 4,350 people have sewer connections.

Garbage and Night Soil.

Great difficulty has been experienced in the handling of the garbage. An incinerator plant was built, but the results obtained were not satisfactory and it was finally abandoned. For a while the garbage was handled by contract by a man interested in a fertilizing plant, but the contract was taken away from him because of negligence in the collection. At present it is being handled by the city. It is hauled outside the city and buried. Plans for a new incinerator plant are contemplated.

The night soil is collected and buried outside the city.

Manufactural Wastes.

Two concerns have wastes of a detrimental character, but only one, a straw-board works, need be considered, as the other, a canning company, makes use of all of the waste except a small amount of wash water. There are fifty employes at the canning factory, and tomatoes, corn and peas are put up. The corn husks and cobs and the pea vines are put into a silo and used for feeding purposes. Practically all the waste that finds its way into the river is the wash water from the fresh tomatoes.

The United Box-Board Company has 160 employes. Their water supply is drawn from the river and all the waste wash water containing straw, lime, etc., amounting to about 2,000,000 gallons daily, is emptied into the river water.

Typhoid Fever.

For the years 1910, 1911 and 1912 there were two deaths a year. This would make the rate 23 per 100,000, which is low in comparison with that of the other cities on the river where similar conditions exist.

PERU.

Peru, Miami County, is located sixteen miles below Wabash. Peru has a population of 11,154. With the adjacent suburbs of South Peru and Bridgeview, a total population of about 13,000 is located at this point.

Improvements include a municipal water and electric light plant, sixteen miles of improved streets, two miles of which are paved, a small park, and an adequate sewer system.

Water Works.

An adequate water supply is obtained from seventeen eight-inch wells, fifteen of them located near the pumping station along the river bank, being from 300 to 400 feet in depth, and two located at Oakdale, about half a mile from the station, are 80 feet in depth. The water from the fifteen deep wells is lifted by air to a suction well fifteen feet deep and thirty feet in diameter, with a capacity of 79,500 gallons. The water from the two wells at Oakdale flows by gravity to the same well.

In case of fire or accident, water can be drawn from the Wabash River. This, however, is seldom done.

The Worthington centrifugal pumps, electrically driven, of 1,440,000 gallons capacity, force the water to a reservoir of 1,500,000 gallons capacity, located on a hill south of the pumping station. One compound duplex condensing Worthington pump of 1,500,000 gallons capacity and one duplex non-condensing Worthington pump of 1,000,000 gallons capacity are held in reserve.

The direct-indirect system is in use. The average daily consumption is 1,700,000 gallons, which is supplied to about 8,000 consumers by twenty-six miles of cast iron mains.

Sewerage.

All the sewers are constructed on the combined plan, there being seventeen miles with ten outlets into the Wabash River. The number of sewer services are few, there being only about one-third of the people connected with the system. Steps are to be taken for the passing of an ordinance requiring sewer connections.

Garbage and Night Soil.

The garbage is collected and hauled by contract outside the city, where part of it is fed and the rest dumped.

Two licensed men collect the night soil and haul it outside of the city. Part of it is used as a fertilizer and the rest of it is buried.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

The typhoid death rate has been unusually high. It was 17.2 in 1908, 38.5 in 1909, 57.2 in 1910, 173.8 in 1911 and 26.9 in 1912. There was a decided drop in the last year, but for the four years before the rate practically doubled each successive year.

LOGANSPORT.

Logansport, Cass County, is twenty miles below Peru. It has a population of 19,334 in an area of 5½ square miles.

Public improvements include a municipal water and electric light plant, an efficient sewer system, four miles of paved streets, and fifty-four miles of improved streets.

Water Works.

Eel River, draining the northern portion of Cass, Miami and Wabash counties, is the source of supply. A dam located at Tenth street forms a storage reservoir from which the supply is drawn.

The pumping station, established in 1876, is located on a race about 800 feet below the dam. The available pumping capacity is 18,000,000 gallons, divided as follows: A new Allis-Chalmers pump of 6,000,000 gallons, a Fairbanks-Morse of 3,000,000 gallons, and two water power, Cope and Maxwell pumps of 3,000,000 gallons each.

The direct pressure system is in use. The average daily consumption is 4,800,000 gallons, which is supplied to about 40 per cent. of the people by over forty miles of mains.

The water is not satisfactory for drinking and domestic purposes during most of the year, and the people have voted in favor of a bond issue to be used in the construction of a filtration plant.

Sewerage.

The city has an efficient sewerage system. There are twelve miles of combined sewers, with five outlets into the Wabash River and five outlets into Eel River. About 8,000 people have sewer connections.

Garbage and Night Soil.

The garbage is gathered by contract, and hauled to the country, where it is used for feeding.

The night soil is collected by licensed men and hauled two miles outside the city limits. Part of it is used for fertilizer and the rest is buried.

Manufactural Wastes.

There are two concerns whose waste would have a harmful effect if dumped into the Wabash River—a packing house and a soap factory. There are ninety employes at the packing house. The water supply is obtained from a spring, the average daily pumpage is about 150,000 gallons. Very little detrimental waste reaches the river. Even the wash water is passed through the tanks and all the solids removed before the water reaches the river.

At the Heppe Soap Works, six men are employed and no wastes are dumped into the river. The water supply is drawn from a creek.

Typhoid Fever.

With the exception of one year, 1911, when the death rate was 10.5 per 100,000, the rates for the last five years have been unusually high. It was over 41 per 100,000 for the years 1908, 1909 and 1910, and 82.8 for 1912. An epidemic occurred in the first part of 1912, and the source of infection was laid to the water supply.

DELPHI.

Delphi, Carroll County, is twenty-five miles below Logansport. It has a population of 2,161. The town is about one mile from the river and is on Deer Creek. There are four miles of paved streets. The city owns the water works and the electric light plant is privately owned.

Water Works.

The supply is taken from two large springs and from Deer Creek. The springs are about one mile apart and three miles northeast of the town. The water from them flows by gravity to two reservoirs at the pumping station, one is 60 feet in diameter and 12 feet deep, with a capacity of 254,000 gallons, and the other 60 by 80 feet, and 12 feet in depth, with a capacity of 432,000 gallons. The creek water is taken from an infiltration bed 5½ feet deep, 8 feet wide and 28 feet long, and pumped to these reservoirs by a horizontal single low-pressure National pump.

The direct-indirect system is used, two high pressure horizontal duplex compound Dean Holyoke pumps of 1,000,000 gallons capacity, pumping against the standpipe. The standpipe, which is 9 feet in diameter and 30 feet in height, with a capacity of 14,300 gallons, stands on the top of a brick tower. The pressure, when the standpipe is full is 55 pounds.

About 1,800 people depend upon the supply, part of which is metered. There are about five miles of mains in use. The average daily consumption is 700,000 gallons. The analyses made have always shown a satisfactory water.

Sewerage.

The town has about two miles of sanitary sewers, with one opening into Deer Creek and less than one-half mile of storm sewer with an outlet into Deer Creek. The estimated population connected with the sanitary sewer is 800.

Garbage and Night Soil.

Part of the garbage is collected by private parties for feeding purposes. The city team takes care of a portion and the householders dispose of the remaining part.

The night soil is hauled outside of the city and buried.

Manufactural Wastes.

There are two manufacturing concerns that have waste of a detrimental character, the Great Western Canning Company and a straw-board works. The canning company employs about fifteen people, and their product is corn, hominy and kraut. The straw-board plant has been idle for over two years, but is is expected to resume operation within a few months. The waste from both places reaches the Wabash River.

Typhoid.

There has been but two deaths from typhoid fever in the last five years, one of these occurring in 1909 and the other in 1910. From four to six cases occur each year, but most of them are imported.

LAFAYETTE.

Lafayette, Tippecanoe County, is 22 miles below Delphi. It has a population of 20,277 in an area of 4.6 square miles.

Public improvements include municipal water works, a heating and one lighting plant and a crematory. At the end of 1911 there were 52.68 miles of improved streets, which includes 4.17 miles of asphalt pavement and 2.50 miles of brick pavement.

Water Works.

The water supply at present is taken from deep wells located along the bank of the Wabash River. Originally the supply was taken from the Wabash River. The river pumping station constructed in 1875 is located on the river bank near the wells.

Forty-six six-inch tubular wells about 35 feet deep are now used. Additional water was needed, and in April, 1911, two six-inch test wells were sunk, one 256 feet deep and the other 81 feet. An abundance of water was found, and two twelve-inch wells averaging 60 feet in depth, were sunk.

Two Worthington tandem compound condensing high-duty engines pump the water from the river station into the mains, the surplus supply going to the reservoir at Columbia Park. The reservoir has a capacity of 4,200,000 gallons. Two 1,000,000-gallon Worthington triple expansion engines, located in the park near the reservoir, are used to give additional pressure to that portion of the city in Oakland Hill.

Improvements to be made at the river pumping station include a reservoir having a capacity of about 200,000 gallons, and the installation of an air compressor to life the water from the new wells to the new reservoir. The new reservoir is for the purpose of giving head to the Worthington pumps.

In 1911 a total of 1,372,600,000 gallons of water was pumped, an average daily consumption of 3,760,000 gallons. The Monon shops are the largest consumers, using about 9,000,000 gallons of water per month. There were 4,046 services in use in 1911, representing about 15,000 consumers. To the end of 1911 there were about 54 miles of mains.

Chemically and bacterially the water was good for drinking purposes, although for boiler and washing purposes it was quite hard.

Sewerage.

At the end of the year 1911 there were 16¼ miles of sanitary sewers, with six outlets into the Wabash, one 24-inch, one 30-inch, one 5-foot, one 5½-foot, one 6-foot and one 8-foot. It is estimated that 10,000 people are using the sewers.

Garbage and Night Soil.

A 24-ton Dixon crematory located near the river pumping station takes care of all the garbage of Lafayette. An effort was made by West Lafayette to have their garbage disposed of at this plant, but its capacity is overtaxed at times during some months of the year. The average daily amount of garbage consumed is 12½ tons. The yearly consumption included 1,800 barrels of offal from poultry houses, 1,000 barrels from groceries and other houses, 2,200 loads of brewing hops and garbage. The cost per ton was about $1.04. The night soil is collected and hauled to the country and buried.

Manufactural Wastes.

There are three manufacturing concerns that empty waste into the river at this point. The Lafayette Box-Board Company, the Gas Works and the Dryfus Packing Company. Special attention was given to the straw-board waste by J. C. Diggs, mention of which is made elsewhere.

Typhoid Fever.

In 1911 and 1912 the typhoid death rate was 25 per 100,000. For three years previous, it had been much higher, averaging 48.5.

WEST LAFAYETTE.

West Lafayette, Tippecanoe County, has a population of 3,867, and is located opposite Lafayette. In considering the water and sewage the student population of Purdue University has to be taken into consideration. The attendance at the school is about 2,000, most of whom live at West Lafayette while school is in session. The town proper is about one mile from the river. A private water company supplies the water, and the electricity used is obtained from Lafayette.

Water Works.

A private company owns and operates the water works. The water is obtained from eleven six-inch wells averaging 70 feet in depth, which are located about 300 feet from the river at low-water mark, and about 100 feet from the station.

The average daily consumption is 800,000 gallons. About 3,500 of the town population depend upon this supply for the year and about 1,500 of the student body for nine months of the year. The total pumping capacity of the plant is 3,750,000 gallons, supplied by three pumps as follows: one McGowan compound condensing duplex of 1,500,000 gallons capacity, one American compound simplex of 1,500,000 gallons and one Smith-Vaile compound duplex of 750,000 gallons.

The direct-indirect system is used, the surplus pumpage going to the standpipe, located 285 feet above the pumps. The reservoir has a capacity of 500,000 and it is cleaned once and sometimes twice a year. The inside of the tank is painted once a year. A ten-inch main leaves the plant and carries the water to the distributing mains and the standpipe. The standpipe gives an average pressure of 70 pounds in town.

Sewerage.

The sewerage system is very complete and the greater part of the population is connected. There are about four miles of sewers with two outlets into the Wabash River, one 24 inches and one 30 inches. About 2,800 of the population of the town proper, and about 1,500 of the student body use the sewers.

Garbage and Night Soil.

The garbage is hauled to a dump located about two miles north of the town. As most of the people use the sewers, there is very little night soil to dispose of. The small quantity collected is hauled to the country.

Manufactural Wastes.

There are no manufactural wastes to be considered.

Typhoid Fever.

West Lafayette has been quite free from typhoid. Careful attention has to be given to the student body, as most of the sickness, such as smallpox, measles and other infectious diseases, are brought in by them upon entering school or returning from holidays. The typhoid data could not be obtained from West Lafayette, as the town is not incorporated.

ATTICA.

Attica, Fountain County, has a population of 3,368, and is located about twenty-seven miles from Lafayette by river. The water works and the lighting plant is owned by the city. There are about two miles of paved streets.

Water Works.

The water supply is drawn from five six-inch, one four-inch and two ten-inch wells, about 136 feet below soil, or 102 feet below low water level. The first 30 feet is gravel, then 30 feet of hard pan followed by 40 feet of the original river bed.

The direct-indirect system is used here, the surplus pumpage, while the pumps are in operation, goes to a reservoir of 500,000 gallons capacity located on a hill 190 feet above the pumping station. Two Worthington vertical compound condensing pumps, each of 500,000 gallons capacity, are in use. The average daily consumption is about 400,000 gallons, and about 3,200 of the population depend upon the supply.

There are about thirteen miles of mains in use, the pressure in which averages about 85 pounds.

Sewerage.

Only the business portion of the town is sewered. There is about 1½ miles of sewerage, with two 24-inch outlets into the Wabash River. About one-third of the population uses the sewers.

Disposal of Garbage and Night Soil.

The garbage is dumped in the bottoms across the river. Most of the vaults when full are filled up and new ones are dug.

The little night soil that is collected is hauled into the country.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

There has been no typhoid fever in the town proper in the last four years. Although a few cases have been imported, no deaths have occurred in the last five years.

WILLIAMSPORT.

Williamsport, Warren County, is located three miles below Attica and is one-fourth of a mile back from the river. It has a population of 1,243. There is about one-fourth mile of paved streets and the town owns the water works and lighting plant.

Water Works.

The water supply is drawn from two eight-inch wells, one 187 feet deep and the other 157 feet deep. The plant is being remodeled. Two American vertical pumps, with six-inch cylinders of two-foot stroke, driven by an International coal oil engine of 20 horse power, forces the water to the standpipe of 60,000 gallons capacity.

Two steam pumps were in use at the old power plant. Formerly the water flowed from the present wells down to a reservoir at the old plant. This reservoir was 15 feet deep and 20 feet in diameter and held 35,000 gallons. The standpipe is located on the hill with the wells, and formerly there was a loss in head of 48 feet, as the pumps just took the water from the reservoir and forced it back up hill to the standpipe.

At present the surplus from the standpipe flows to the reservoir. The average daily consumption is about 40,000 gallons, this being supplied to about 900 of the population. The average pressure is 60 pounds.

Sewerage.

There is about 1¼ mile of sewerage with two outlets into Fall Creek. About 400 people are connected.

Disposal of Garbage and Night Soil.

The garbage is hauled to the town dump about one-half mile from the river. The night soil is hauled to farms near town.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid.

In 1911 there was one case and no deaths from typhoid.

COVINGTON.

Covington, Fountain County, is 13 miles below Williamsport and has a population of 2,069. Public improvements include a water works and lighting plant and two miles of paved streets. The water works and lighting plant will pass out of the hands of the private company controlling it now, to the town in January, 1913.

Water Works.

The water supply is taken from springs, located near the center of town. The water is pumped from two wells, one 30 feet long, 10 feet wide and 15 feet deep, and the other 20 feet in diameter and 10 feet deep. The water caught in a third well flows into the latter.

Two Dean duplex pumps of 500,000 gallons capacity each, pump the water to a standpipe 100 feet high and 16 feet in diameter, with a capacity of 150,000 gallons. The system of distribution is indirect and the pressure when the standpipe is full is 50 pounds.

The average daily consumption is about 120,000 gallons and about 75 per cent. of the population, or 1,500 people, depend upon it. There are about six miles of mains.

Sewerage.

Two private sewers are in use. One connects the court house and a few stores and private residences, and the other is used by stores and residences. Together they total about one mile in length with two openings into the Wabash River. The estimated population using the sewers is 500.

Disposal of Garbage and Night Soil.

The garbage is hauled to the public dump, located east of town and about three-fourths of a mile from the river. Night soil is taken to farms and buried, except in a few instances where the vaults are surreptitiously filled and new ones dug.

Manufactural Wastes.

There are no manufactural wastes to be considered. A large tomato canning factory is located here, but has not been in operation for three years.

Typhoid Fever.

In 1911 there were four cases and no deaths from typhoid fever.

PERRYSVILLE.

Perrysville, Vermillion County, has a population of 600 and is located seven miles below Covington. There are no improvements in town.

Water.

There are two public wells in town that are used. Private wells are depended upon for the water and they average from fifteen to twenty feet in depth.

Sewerage.

There are no sewers in town.

Disposal of Garbage and Night Soil.

The garbage is taken care of by individuals who dispose of it to suit their convenience. The slops from kitchens are fed to chickens and hogs. There are a few hogs kept in town.

Vaults are never cleaned. A sand and gravel soil underlies the town, and when a vault is full a new one is dug and the old filled.

Manufactural Wastes.

There are no manufactural concerns in town.

Typhoid Fever.

There were six cases of typhoid and one death in 1912. In 1911 there were no cases.

CAYUGA.

Cayuga, Vermillion County, is eight miles below Perrysville. It has a population of 600. The town is about two miles back from the Wabash River and is located on the Big Vermillion River. A private electric light plant is in operation.

Water.

The water supply is obtained from private wells 18 to 75 feet in depth.

Sewerage.

There is about one-half mile of storm sewers, with two outlets into Big Vermillion River.

Garbage and Night Soil.

The garbage is dumped along the banks of Big Vermillion River. The night soil is hauled to the country.

Manufactural Wastes.

The Cayuga Canning and Manufacturing Company employs about 60 people. The waste does not reach the river.

Typhoid Fever.

In 1911 there were three cases of typhoid and no deaths.

NEWPORT.

Newport, Vermillion County, is the county seat and has a population of 732 and is seven miles below Cayuga. It is about two miles back from the Wabash River and on the Little Vermillion River. Electric lights are in use, power being obtained from Cayuga.

Water.

The water supply is taken from private wells.

Sewerage.

There are no sewers in town.

Disposal of Garbage and Night Soil.

No collection of the garbage is made, every one disposing of their own to suit their convenience. Night soil is hauled to farms in some cases and sometimes the vaults when full are filled in and new ones dug.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

There are no cases of typhoid fever in 1911.

MONTEZUMA.

Montezuma, Parke County, has a population of 1,537 and is located about seven miles below Newport. There is a municipal electric light plant here.

Water.

Private wells are depended upon for the drinking water.

Sewerage.

There are no sewers in town.

Disposal of Garbage and Night Soil.

The garbage is hauled across the river and dumped. The night soil is hauled to the country and buried.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

There were no cases from typhoid fever in 1911.

CLINTON.

Clinton, Vermillian County, has a population of 6,560 and is located about nine miles below Montezuma.

Public improvements include a private water, private lighting plant, about one mile of paved streets and a sewerage system.

Water Works.

The water supply is drawn from 13 8-inch wells, varying in depth from 62 to 75 feet below the ground level, in the bottom about 110 to 123 feet below the level of the pumping station flow. They are about 700 feet from the river and are under water several times each year, but the wells are capped and well protected from surface seepage and the water is never turbid.

The first pumps, two Dean duplex compound of 750,000 gallons capacity each, were installed in 1904. They were connected to 5 of the 13 wells. These pumps are not in use now but are held in reserve. Later a Smith-Vaile compound, condensing pump of 2,000,000 gallons capacity, connected to eight wells, was installed. These wells are in use now. There are about 18 miles of mains and direct pressure is used, the ordinary pressure being 45 pounds and fire 100 pounds.

The total pumpage in 1911 was 60,000,000 gallons, an average daily consumption of 165,000 gallons. About 75 per cent of the population depend on this supply.

A private company owns the plant now, but it will revert to the municipality in 1922. It is a paying investment and the indebtedness is being reduced each year.

Sewerage.

Sewers were first installed in 1907. At present there are about 1¼ mile of sewers in the business section. There are three 24-inch outlets into the Wabash River. Because of the comparative recent installation very few people use them, the estimated number being 800.

Disposal of Garbage and Night Soil.

The garbage and night soil is hauled across the river and dumped in the bottoms. Every one arranges for the disposal of their own wastes, as the city has no wagons.

Manufactural Wastes.

There are no manufactural wastes at this point. A canning factory is located here, but it has been shut down for some time.

Typhoid Fever.

The typhoid fever death rate has been low for the years 1910, 1911 and 1912, being 22.2, 0 and 15.3 respectively. In 1909 it was 44.4 and the previous year 28.3.

TERRE HAUTE.

Terre Haute, Vigo County, has a population of 60,305 and is the largest city on the Wabash River and the fourth largest in the State. Since the last census the population has decreased 3,000.

There are 8¼ square miles in the city, one-half of which is served by sewers. It is 21 miles below Clinton.

Public improvements include a private water company, a private electric light plant, a private gas company, an extensive sewer system, a municipal crematory, 86 miles of improved streets, of which 25 miles are paved with brick or asphalt.

Water Works.

The water works was established in 1873. It is located on the banks of the Wabash River on Water street, just north of the Big Four bridge. This point is above all local sewer outlets.

Two Clapp & Jones vertical pumping engines of 3,000,000 gallons capacity each were installed. Their suction was taken from a large wooden intake or crib, which at times of law water was partially out of water. Boards covered with sand were placed over the intake to prevent it from filling up with dirt during periods of high water. A wooden flume 30 inches wide by 24 inches deep, extending out about 60 feet into the stream, conveyed the water to the suction well.

In 1883 another Clapp & Jones vertical pump of 4,000,000 gallons capacity was installed and connected to the crib. About this time ten six-inch wells, averaging about twenty feet in depth were driven. Pump No. 1 was connected up to them. Sufficient water could not be obtained from these wells and many people objected to its hardness.

The well water was diluted with river water to supply the demand, until equal parts of each were used. After these wells were in use about five years they were abandoned and the water was obtained entirely from the river.

In 1889 the stock of the company changed hands and the present owners took the plant over. The following year a new engine room was built and engine No. 4, a Holly vertical compound crank and fly-wheel pump of 6,000,000 gallons capacity was installed. At the same time twelve National vertical filters, ten feet in diameter, with a total capacity of 4,000,000 gallons, were installed and a clear well reservoir of 770,000 capacity was built. This reservoir, 85½ feet in diameter and 18 feet deep, is kept full of filtered water to be used in emergencies, such as big fires and heavy demands on account of sprinkling in extremely dry weather, the object being to provide a supply of filtered water, ready to be delivered immediately without going through the regular process of filtration. Engine No. 5 is connected to the reservoir.

About 1890 two gravity filters of the Jewell type were put in. They took care of the peak of the load, the water from them flowing to the clear well reservoir to be used in cases of emergency. These filters were abandoned and torn down in 1901.

As the twelve pressure filters did not meet the guaranteed requirements, another horizontal National filter was installed in 1892. Nine horizontal pressure filters of the Jewell type, eight feet in diameter and twenty feet in length were installed in 1900. During the same year, pump No. 5, a Root rotary pump, directly connected with a Corliss engine was also installed. This pump as previously stated, takes its suction from the clear well reservoir.

In 1901, a sedimentation basin, 230 feet long, 60 feet wide and

7 feet in depth was built. It was built of concrete and is covered with an iron roof, the low side walls and end walls being pressed brick. The basin is divided by a concrete wall, six feet thick at the base. The water is admitted into the one end at the side, moves slowly to the other end where it overflows into a steel flume, which conveys it to the other half of the basin through which it goes. It is discharged into a pipe which conveys the water to the pumping station. The water has a settling period of from four to six hours, and most of the mud and sediment are deposited. The basin is provided with four wash-out valves situated at such a level as to facilitate the rapid removal of the mud. A private sewer, 1,200 feet long, extends from the basin to a point on the river below the pump station. The total capacity of the basin is 772,000 gallons.

In 1905, pump No. 6, a Jackson centrifugal, connected by a rope drive to a Quincy compound condensing engine, was installed. It has a capacity of 6,000,000 gallons and is used for low service only. During the same year, pump No. 7, an Allis-Chalmers vertical triple-expansion crank and fly-wheel engine was installed.

At the present time the total pumping capacity of the plant is 22,000,000 gallons, which is limited to 9,000,000 gallons daily available supply by filters. Engines Nos. 4, 5 and 7 can be used for high service.

About 30,000 people depend upon the water from this source, the average daily pumpage for 1911 being, 4,266,000 gallons, which includes 380,000 gallons of wash water for the filters. There are 85 miles of mains and 5,900 taps in use, with about 2,000 more taps installed, but idle.

During 1911 the settling basin was in use 164 days. It is only used when the turbidity is high, that is when it is 100 or over. Alum is used to assist in the coagulation and sedimentation during these periods.

In 1907 the laboratory was installed by Professor Bruce, of Rose Polytechnic Institute, to assist in the control of the filters.

The hypochlorite plant was installed and put in operation in January, 1912. It has been used continually ever since, thus assuring the people a safe supply of water. The treatment is applied at the screen chamber or intake.

Sewerage.

About one-half of the total area of the city is sewered. There are 56 miles of sewers, with five outlets into the Wabash River. It is estimated that 22,000 people use the sewer.

Disposal of Garbage and Night Soil.

During the year of 1911 a total of 20,546 barrels of garbage were collected and disposed of at the municipal crematory at a total expense of $9,730.00, or 47½ cents a barrel.

The night soil is taken to a farm about four miles east of the city and buried. Ashes and street sweepings are hauled across the river and dumped into the bottoms.

Manufactural Wastes.

Three large distilleries, employing 290 men, feed about 10,000 head of cattle. The estimated wastes, wash water, some liquid from the tankage, and the offal from stables, is sewered into the river. The estimated waste emptying into the river is about 3,000,000 gallons per day.

The American Filter Company, making paper boxes, has 100 employes, and empties about 1,000,000 gallons of waste per day into the river.

Typhoid Fever.

There were 38 cases and 11 deaths from typhoid fever in 1911. The average death rate per 100,000 for the last five years was 40.5.

MEROM.

Merom, Sullivan County, has a population of 521 and is located 51 miles below Terre Haute. There are no improvements such as lighting, parks, etc.

Water.

There are no water works here, the people depending upon wells for their supply.

Sewers.

There are no sewers at this point.

Garbage and Night Soil.

The garbage and night soil is disposed of as the people see fit, no steps being taken by the town or private companies for their disposal.

Typhoid Fever.

During the year 1911 there was one case of typhoid fever.

VINCENNES.

Vincennes, Knox County, Indiana, has a population of 15,359 and is located 38 miles below Merom. It covers an area of 2.76 square miles, and the new sewer system, when completed, will give a total length of 47 miles. There were 42½ miles of improved streets at the end of the year 1911.

Water Works.

The water works, owned by the Vincennes Water Supply Company, was first established in 1886, when two Dean vertical compound condensing pumps of 2,000,000 gallons capacity each were installed. They pumped directly from the river to the standpipe. Two intakes, one 16 inches, extending out into the river 235 feet from the lowwater mark and the other, 20 inches, being 165 feet out at low water. The one has six feet and the other four feet of water over it at low water. The standpipe was 22 feet in diameter, 200 feet high, with a capacity of 568,000 gallons. The consumers are supplied by a gravity system, a pressure of 86 pounds being maintained when the standpipe is full. An 18-inch main supplies the consumers from the standpipe.

In 1898 four Continental Jewell filters, with a total capacity of 2,000,000 gallons, were installed. Six settling tanks 16 feet deep and 20 feet in diameter, with a capacity of 50,000 gallons each, were also built. Two Wheeler compound low-service condensing pumps of 3,000,000 gallons each supplied the water to the settling tanks, which in turn supplied the filters by gravity. From the filters the water flowed to a clear well basin, 13 feet deep and 50 feet in diameter, of 200,000 gallons capacity. From this point it was pumped to the standpipe.

In 1906 all the small wooden filters were removed and replaced by six concrete filters, 16 by 17 feet, of 500,000 gallons capacity each. At the same time two of the wooden settling tanks were removed and four new ones of concrete were built. They are 20 feet square and 10 feet deep with a capacity of 48,000 gallons each. At present there are eight settling basins. The filter beds contain eight inches of gravel and 3½ feet of sand.

The same year a Worthington horizontal tandem triple expension pump of 3,500,000 gallons capacity was installed.

Alum has been used in the treatment since the installation of the filters and a hypochlorite of lime treatment was begun in 1910. About 9,000 people depend upon this water supply.

It is proposed to build a large settling basin 170 feet long, 70 feet wide and 10 feet deep, with a capacity of 119,000 gallons, within a year or so.

Sewerage.

Until the end of the year 1911 there were four miles of sewers, with nine openings into the Wabash River. A sewerage system, now in the process of construction, when completed will give the city 43 additional miles of sewerage and the town will be thoroughly sewered. The new system, as designed by Hering & Fuller, of New York, will have but one opening into the Wabash River, and provisions have been made to screen the sewage and to treat it with hypochlorite of lime if it is deemed necessary at any time. Vincennes will have as complete a sewer system as any city in the State. It is estimated that 2,000 people are using the present system.

Garbage and Night Soil.

The garbage is hauled to a reduction plant owned and operated by a private company. The night soil is hauled to the country.

Manufactural Wastes.

At this point we find three strawboard works employing about 160 people and emptying about 1,400,000 gallons of strawboard waste into the river. Two distilleries, employing 65 men, dry the slop. Some waste liquor from the slop gets into the river. One packing company, canning baked beans and catsup, employing 192 people, waste about 400,000 gallons of wash-water a day, which is sewered into the river. All the solids are removed before it is discharged.

Typhoid Fever.

In the last five years there have been 20 deaths from typhoid fever. The average death rate for this period has been 28.6 per 100,000.

NEW HARMONY.

New Harmony, Posey County, has a population of 1,229 and is 75 miles below Vincennes.

Water.

Private and public wells are depended upon for the water supply.

Sewerage.

There are no sewers in town.

Garbage and Night Soil.

Part of the garbage is hauled and buried and some of it is disposed of privately. The night soil is hauled to the country and buried.

Manufactural Wastes.

There are no manufactural wastes to be considered at this point.

Typhoid Fever.

There have been no deaths from typhoid fever for several years.

STATE INSTITUTIONS.

Northern Hospital for the Insane.

The asylum at Longcliff is about two miles below Logansport. The attendance, including help, is about 1,100.

The water supply is taken from five six-inch wells 220 feet in depth. Air is used in lifting the water to a reservoir of 210,000 gallons capacity, located near the pump house.

Two high-pressure horizontal Dean pumps, one of 288,000 gallons and the other of 720,000 gallons daily capacity, are available. The direct pressure system is in use, the pressure maintained being about thirty pounds.

The average daily consumption is about 130,000 gallons, which is all that can be obtained from the wells. This supply is inadequate. The amount available should be about 150,000 gallons per day.

A Kinnicutt softening plant of 25,000 gallons capacity is used to treat the water.

There are nearly 1½ miles of sewers, with one twelve-inch outlet into the Wabash River.

All the garbage is fed to hogs, kept at the institution.

There has been no typhoid fever in the institution which has originated there. One or two cases have been imported.

State Soldiers' Home, Lafayette.

The State Soldiers' Home is located about 4½ miles above Lafayette. There is an average of 850 residents, which, with the help employed, brings the population to about 925.

The water supply is taken from six six-inch wells, averaging about 65 feet in depth, and located about 100 feet back from the river. A Dean pump of 750,000 gallons capacity in twenty-four hours and a Laidlow-Dunn-Gordon duplex pump of 750,000 gallons capacity, force the water from the wells to a storage reservoir consisting of two tanks of 40,000 gallons each, located on the hill in the home proper.

The average daily consumption is about 80,000 gallons and the plant is in operation about ten hours a day.

The water, while good for drinking purposes, is quite hard and a softening plant could be installed to good advantage.

The grounds are thoroughly sewered, all the sewage being conveyed to the Wabash River at one outlet.

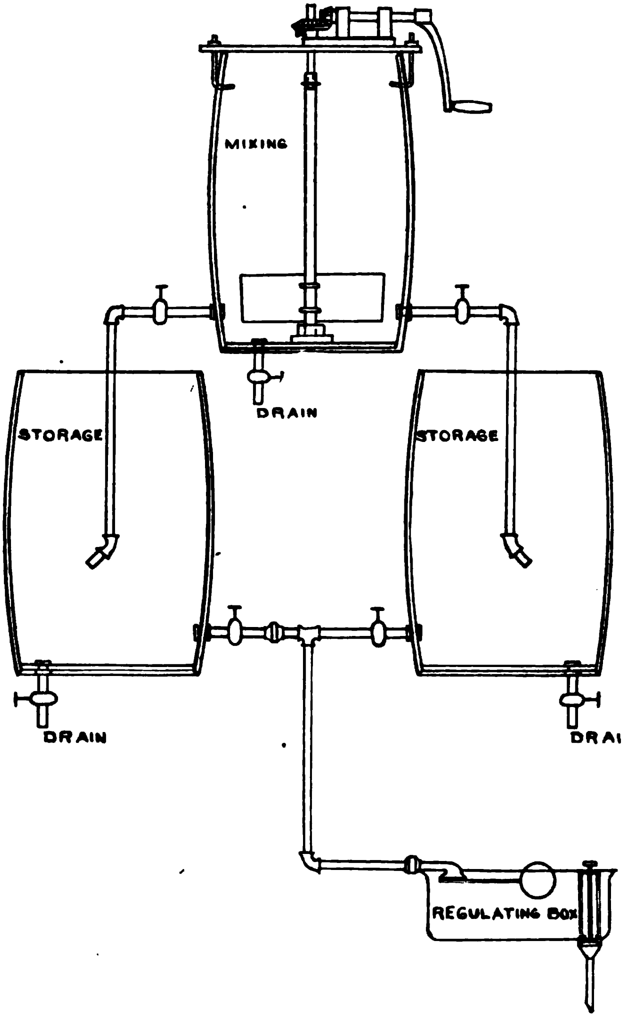
The health conditions are very good. There has only been one case of typhoid fever and no deaths in the last few years.

AN EMERGENCY HYPOCHLORITE PLANT.

J. A. Craven, C. E.

The public has come to appreciate the necessity for a pure water supply, and in obedience to that demand municipalities and corporations are employing every known means to furnish a potable water. The watersheds of surface supplies are protected against pollution. The waters of rivers which receive sewage are purified by sedimentation or filtration. Even the well supplies are carefully guarded against pollution. The diminishing ground water level has made it necessary to abandon many of the deep well supplies which furnished a potable water and the use of surface supplies either from streams or impounded reservoirs, will constantly increase. Mechanical methods of purification by sedimentation, by slow sand filtration, and by filtration in the so-called mechanical plants are all satisfactory methods and in most instances are quite dependable.

Nevertheless there are still many supplies in the State which are not so protected, and are so situated as to be liable to contamination. Filtration beds occasionally become clogged and so less efficient, and the practice of purification by sedimentation is at best only a partial protection to the consumers of the water. Fortunately within the last few years a new system of water purification has been developed whereby the water is subjected to chemical treatment which kills all bacteria and renders the supply practically sterile without noticeably changing its composition. This method depends upon introduction into the water of small quantities of hypochlorite of lime. Water engineers have recognized the very great value of the treatment as being both cheap and effective and it is now in use in all parts of the country. It is, however, rather an emergency treatment than one to be depended upon for complete purification.



A TEMPORARY HYPOCHLORITE OF LIME TREATING PLANT

In order to provide the citizens of Indiana with means whereby sudden epidemics of water-borne diseases due to infected water supplies may be promptly checked, the State Board of Health has built an emergency hypochorite plant. This plant, while simple in construction, is complete, and by its use the water supply of towns and cities of moderate size can be rendered sterile on short notice.

The accompanying cut shows quite clearly the simple construction of the outfit.

Three barrels are arranged as shown, one for mixing and two for storing the solution. In the mixing barrel the hand-operated mixing device aids in dissolving the chemical. After a thorough mixing the solution is allowed to settle and clarify and is then run into the storage barrels. The second storage barrel is provided to avoid any interruption of the treatment.

The flow of the solution is controlled by the regulating box which is equipped with a hard rubber float which maintains a constant head over a slot and in this way a uniform feed is obtained. The solution is preferably fed into the suction well or if this is not feasible it can be injected into the suction pipe of the high pressure pumps.

This outfit is available for use whenever the potability of a water is questioned, and will be installed at any water supply at no cost to the municipalities or corporations save the actual expense of transportation and operation. Health officers are urged to make use of this outfit whenever occasions arise which demand prompt attention in order to protect their constituents from typhoid fever or other water-borne diseases.

THE MANURIAL VALUE OF CERTAIN SLUDGE DEPOSITS.

H. E. Barnard.

During an investigation of the sanitary condition of the Grand Calumet River, a sluggish stream emptying into Lake Michigan near South Chicago, Illinois, it seemed of interest to determine the character of the sludge deposited in the bottom of the river. The Grand Calumet is the name applied to a bayou of Lake Michigan. This river originally had two points of entrance to the lake, one at the present city of Gary, and the other at South Chicago. At the present time manufacturing operations have practically closed the first outlet and the entire flow into the lake is now at South Chicago. The river is about twenty-five miles long, and has a drainage area of about eighty-eight square miles. It receives all the sewage and trade wastes from the cities and manufactories along its bank, the most important sources of pollution being the sewers of the cities of Gary, Indiana Harbor, East Chicago, Hammond, the West Hammond Sewer, that portion of Chicago drained into the Little Calumet River, a tributary stream, through the Indiana avenue, Wentworth avenue and Halsted street sewers, and at the mouth of the river the sewers from the Strand, a division of South Chicago, and from Ninety-Second to Ninety-Fifth streets, which discharge the drainage from an area of about six thousand acres.

The Indiana cities empty all their sewage into the Grand Calumet. At Hammond the manufacturing plants engaged in the production of food stuffs have deposited enormous amounts of organic sludge in the river. In years past distillery refuse and the manure and washings from cattle yards where the slop is fed has been poured into the stream in great quantities. Several large glue works now contribute materially to the offensive condition of the water. During a portion of its flow, some six miles in length, the river closely resembles a septic tank in appearance and action. The decomposition of organic matter constantly goes on, as is shown by gas bubbles rising to the surface of the water, and by the large amounts of sludge which, inflated with gas, break away from the bottom and flow to the surface of the water. In this portion of the river the bottom is a soft muck, consisting of silt and organic deposits, in some places twelve to fifteen feet deep. This material contains about 80 per cent. of water and constitutes the sludge under investigation.

In all eleven samples of this sludge were analyzed. The results of the analyses are shown in the accompanying table. The analyses are arranged according to the sampling points where the sludge was taken, from the east end of the river to a point near its junction with the Little Calumet. It will be noted that the greatest concentration and consequently highest values for nitrogen, potash and phosphoric acid are observed on the sample taken from the river bottom at the glue works. At this point the sludge was filled with hairs and decomposing animal material. It was very offensive in odor and upon drying had the appearance of a low grade fertilizer. One sample, that taken from the river bottom at the junction of the canal from Indiana Harbor with the river, had practically no fertilizer value, being low in all three factors. The results of this analysis may be taken as a constant to express the value of the sludges on an unpolluted river bottom. Any additional value which the sludge may carry must be ascribed to the addition of fertilizing materials from deposited sewage.

THE COMPOSITION AND VALUE OF SLUDGES.

No.	Sampling Points.	Condition of Bottoms.	Per Cent. K_2O.	Per Cent. N.	Per Cent. P_2O_5.	Value Per Ton.
1	River bottom at No. 10	Loamy	1.200	1.064	.399	$5 35
2	River bottom at No. 11	Loamy	1.029	1.110	.083	5 10
3	River bottom at Grasselli Chemical Works	Loamy	.976	.879	.598	4 62
4	River bottom at junction of canal	Sandy	.307	.045	.484	86
5	River bottom at East Chicago sewer	Woody and sandy	.674	.202	.842	2 07
6	River bottom at No. 19	Loamy	.764	1.008	.414	4 72
7	River bottom at Calumet Ave. bridge	Loamy	1.725	1.232	.483	6 56
8	Sludge floating at Calumet Ave	Loamy	1.583	1.154	.528	6 15
9	River bottom at glue works	Loamy with hairs	3.635	1.338	2.806	10 60
10	River bottom at No. 29	Loamy	.827	.727	.424	3 93
11	River bottom near mouth of Hedgewick sewer about one mile west of forks of Calumet River	Sandy	.434	.386	.459	2 19

REPORT OF THE DEPARTMENT OF WEIGHTS AND MEASURES.

H. E. BARNARD, Ph. D.
State Commissioner of Weights and Measures.

The Weights and Measures Law passed by the legislature of 1911 became effective January 1, 1912. At that time the newly organized department purchased a complete set of standard weights and measures from W. & L. E. Gurley, Troy, N. Y. The State by this purchase for the first time in its history came in possession of standards for the regulation of its trade. These standards, after purchase, were sent to the Bureau of Standards, Washington, D. C., where they were carefully tested against the Government standards. All the standards were well within the limit of error set by the Government authorities. They are now in the custody of the State Commissioner of Weights and Measures at his office in the State House.

The funds for the equipment of the department with apparatus and standards were taken from the money appropriated for the enforcement of the Food and Drug Law. After an expenditure of about $2,000 in securing the necessary apparatus and standards, it was impossible for the department to continue the work, as funds were wholly lacking. The only work accomplished since the taking effect of the law has been that done by John T. Willett, an inspector of the food and drug department, who is chief inspector of weights and measures. He has visited many cities and counties for the purpose of arousing an interest that might eventually result in the appointment of city or county sealers. His report, which is self explanatory, follows.

In March a three days conference of the sealers of the State was held at the office of the commissioner. At this time the provisions of the law were carefully studied and a school of instruction held for the benefit of the newly elected sealers. This conference was of benefit to the sealers of the State, and by it they learned better to appreciate the importance of their position and their responsibility as guardians of trade standards.

The inspectors and sealers of cities and counties, with but few exceptions, have made monthly reports of their work to the state commissioner. These reports are of much interest, and in general show carelessness on the part of merchants in the use of unsatisfactory apparatus, incorrect scales and dilapidated measures.

It is to be hoped that a special appropriation may be provided for this newly created department, and that within the next few years every city and county may be provided with necessary standards of weights and measures and with a competent trained inspector who can use them.

REPORT ON WEIGHTS AND MEASURES.

JOHN T. WILLETT.
Chief Inspector of Weights and Measures.

I beg to report the condition of weights and measures used as standards by the following cities and counties of Indiana:

Cities—South Bend, Hammond, Mishawaka, Elkhart, Ft. Wayne, Madison, Crawfordsville, Evansville, Converse, Kokomo, Richmond, Lafayette and Marion.

Counties—Lagrange, Dearborn, Switzerland.

These inspections were made during the month of August.

Number of city and county sealers' equipments inspected	13
Number of county auditors' equipments inspected	3
Number of weights inspected	302
Number of weights correct	239
Number of weights adjusted	42
Number of weights condemned	21
Number of dry measures inspected	106
Number of dry measures correct	85
Number of dry measures condemned	21
Number of liquid measures inspected	95
Number of liquid measures correct	95
Total number of inspections	481
Total number of weights and measures correct	405
Total number of weights and measures incorrect	76

REPORT OF COMMERCIAL SCALES, WEIGHTS AND MEASURES INSPECTED.

Number of Scales Inspected.

	April.	May.	June.	Nov.	Total.
Correct	47	58	69	11	185
Adjusted	3	0	16	8	27
Condemned	9	9	19	3	40
Condemned for repairs	5	13	17	2	37
Total	64	80	121	24	289

Number of scales correct, 185.
Number of scales incorrect, 104.

Number of Dry and Liquid Measures Inspected.

	April.	May.	June.	Nov.	Total.
Correct	69	59	44	0	172
Adjusted	0	0	0	0	0
Condemned	42	38	61	0	141
Total	111	97	105	0	311

Number of measures correct, 172.
Number of measures incorrect, 141.

Weights Inspected.

	April.	May.	June.	Nov.	Total.
Correct	20	43	34	49	146
Adjusted	0	0	0	3	3
Condemned	0	19	0	4	23
Condemned for repairs	10	13	16	5	44
Total	30	75	50	61	216

Number of weights correct, 146.
Number of weights incorrect, 70.

These inspections were made during my work of interesting city and county officers in the appointment of city and county sealers of weights and measures. During this time a great many forms of short weights and measures were unearthed. One of the most common forms used by many merchants in giving short weight is by the use of the bottomless measure, which upon investigating I find will only give twelve pounds of potatoes for a peck. The state law provides that the consumer is entitled to fifteen pounds of potatoes for a peck. At the time of my investigation potatoes were selling at five cents a pound. At a rate of three pounds to the peck or twelve pounds to the bushel, this would make a loss to the customer of sixty cents on a bushel of potatoes.

During my investigation I found that the berry box of this year was greatly improved in size over that of former years. In most cases the boxes were found to contain 67.20 cubic inches, or a dry quart, but in some instances I found that the liquid quart of 57.75 cubic inches was still in use, and in some cases the boxes were not a full liquid quart. Many other forms of short weights and measures were discovered. Among them was the investigation of coal being sold and delivered to the consumer in Terre Haute by coal dealers. The following are some of the short weights found:

Nov. 7. Acme Coal and Lime Co. sold to Terre Haute Star:		*Weighed on City Scales No. 1.*	
Gross	10,800	Gross	10,070
Tare	2,300	Tare	2,410
Net	8,500	Net	7,660

Amount short, 840 pounds.

Oct. 31. L. Barnhart Coal Co. sold to John Lake:		*Weighed on City Scales.*	
Gross	7,600	Gross	7,050
Tare	1,600	Tare	1,870
Net	6,000	Net	5,180

Amount short, 820 pounds.

Nov. 7. The United Fourth Vein Coal Co. sold to Mrs. Halstader:		*Weighed on City Scales.*	
Gross	7,800	Gross	7,380
Tare	1,800	Tare	1,850
Net	6,000	Net	5,530

Amount short, 820 pounds.

Nov. 7. Geo. Thurman Coal Yard sold to Frank Ishler:		*Weighed on City Scales.*	
Gross	3,400	Gross	3,060
Tare	1,400	Tare	1,440
Net	2,000	Net	1,620

Amount short, 380 pounds.

L. Barnhart entered a plea of guilty for selling short weight of coal and was fined $10 and costs, amounting to $21.50. Geo.

Thurman entered a plea of guilty for selling short weight of coal and was fined $10 and costs, amounting to $21.50.

The cases against the Acme Coal and Lime Company and the United Fourth Vein Coal Company are still pending.

The following table shows the condition of scales and weights inspected at the Central Hospital for Insane, Indiana Girls' School, School for the Blind, School for the Deaf, and Indiana Woman's Prison, November 19, 20 and 21st.

Inspection of Scales and Weights.

Scales—		Weights—	
Inspected	23	Inspected	61
Correct	10	Correct	49
Incorrect	13	Incorrect	12

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